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THE IMPACT OF THE 1992 MACSHARRY CAP REFORMS
ON AGRICULTURE IN GRAMPIAN REGION

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A thesis submitted in partial fulfilment of the
requirements of
The Robert Gordon University
for the degree of Doctor of Philosophy

This research programme was carried out in collaboration with the
Economic Development and Planning Department, Aberdeenshire Council
and the Aberdeen and Kincardine National Farmers' Union of Scotland

September 2000

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Abbreviations

bn	billion
ha	hectare
kg	kilogram
m	million
n.a.	not available
p/a	per annum
p/w	per week
-	nil or not applicable

The entity concerned is cited by its full title at its first occurrence in a Chapter, with the abbreviation following immediately in brackets, e.g. Common Agricultural Policy (CAP).

AAPS	Arable Area Payment Scheme
AEA	Agricultural Engineers Association
BEUC	European Bureau of Consumers' Associations
BSE	Bovine Spongiform Encephalopathy
BSP	Beef Special Premium
CAP	Common Agricultural Policy
CEC	Commission of the European Communities
CECG	Consumers in the European Community Group
CEECs	Central and Eastern European Countries
CJD	Creutzfeldt-Jakob Disease
CMO	Common Market Organisation
COPs	Cereals, Oilseeds and Protein Crops
COPA	Comité des Organisations Professionnelles Agricoles
DAFS	Department of Agriculture and Fisheries for Scotland
DG	Directorate General
DIY	Do-It-Yourself
EURATOM	European Atomic Energy Community
EAGGF	European Agricultural Guarantee and Guidance Fund
EC	European Community(ies)
ECE	Economic Commission for Europe
ECSC	European Coal and Steel Community
ECU	European Currency Unit
EEA	European Environment Agency
EEB	European Environmental Bureau
EEC	European Economic Community
EFTA	European Free Trade Association
EP	European Parliament
EPT	Environmental Production Technique(s)
ERP	European Recovery Programme
ESA	Environmentally Sensitive Area(s)
EU	European Union
FAO	Food and Agriculture Organisation



FAIR	Federal Agricultural and Improvement Reform
FAWC	Farm Animal Welfare Council
FDGS	Farm Diversification Grant Scheme
FEOGA	Fonds Europeen d'Orientation et de Garantie Agricole
FWPS	Farm Woodland Premium Scheme
FWS	Farm Woodland Scheme
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GRC	Grampian Regional Council
GVA	Gross Value Added
HIE	Highlands and Islands Enterprise
HLCA	Hill Livestock Compensatory Allowance
HV	High Value
IACS	Integrated Administration and Control System
JAEP	Joint Agriculture Environment Programme
LFA	Less Favoured Area
MAFF	Ministry of Agriculture, Fisheries and Food
MCA	Monetary Compensatory Amounts
MEP	Member of the European Parliament
MGQ	Maximum Guaranteed Quantity
MLC	Meat and Livestock Commission
MMB	Milk Marketing Board
NAFTA	North American Free Trade Agreement
NCC	National Consumer Council
NEF	North Eastern Farmers Ltd.
NFI	Net Farm Income
NFU	National Farmers Union
NVCJD	New Variant Creutzfeldt-Jakob Disease
OEEC	Organisation for European Economic Co-operation
OECD	Organisation for Economic Cooperation and Development
PSE	Producer Subsidy Equivalents
RPI	Retail Prices Index
SAC	Scottish Agricultural College
SAPS	Sheep Annual Premium Scheme
SCDI	Scottish Council Development Industry
SEA	Single European Act
SOAEFD	Scottish Office Agriculture, Environment and Fisheries Department
SOAFD	Scottish Office Agriculture and Fisheries Department
SVP	Sheep Variable Premium
TAC	Thainstone Agricultural Center
UA	Unit of Account
UK	United Kingdom
URAA	Uruguay Round Agriculture Agreement
US	United States
USA	United States of America
WGS	Woodland Grant Scheme

EU and non-EU

In November 1993 the European Community (EC) became the European Union (EU). Because this research has examined developments concerning events which occurred before and after the name change took place, the term EC is used when referring to events which took place before the Maastricht treaty came into force and the new title, EU, is used where appropriate. Furthermore, the EU is the EC when entering into international agreements and hence the term EC is used when discussing GATT. Please note that it is difficult to be entirely consistent with the correct term.

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Abstract

This thesis is an examination of the impact of the 1992 MacSharry Common Agricultural Policy (CAP) reforms on one region of the European Union (EU), namely Grampian Region in Scotland. The period of analysis is 1991-95, covering the year prior to reform up to the final year of the transitional period.

The MacSharry reforms were deemed the most radical of all CAP reforms in its 30-year history. Named after Ray MacSharry, then Agricultural Commissioner, these reforms went further than any previously proposed. The reforms occurred as a result of years of internal domestic problems associated with high budgetary costs and surplus products together with international pressures resulting from the Uruguay Round General Agreement on Tariffs and Trade (GATT) negotiations. The reforms were innovative in that they shifted farm support away from high guaranteed prices for farm produce towards direct income payments to farmers.

This thesis examines the MacSharry reforms in depth and attempts to determine their impact upon both Grampian agriculture and agriculture-related industries as any changes to agriculture affect upstream and downstream sectors. In addition the thesis examines agricultural industry change in the region as farmers are found to be increasingly moving towards diversification and alternative farming methods in an attempt to generate additional farm income. In determining the impact of the reforms, the thesis thereby ascertains whether the implementation of the reforms was successful or not in the region. Analysis of this impact is made through the use of both primary and secondary data collection methods. The conclusion drawn from this methodology is that the reforms were successful regarding agriculture per se. As MacSharry had intended, production in arable and livestock sectors were reduced, farmers' incomes increased and those benefiting most appeared to be the smaller producers. However, contrary to predictions, the research on agriculture-related industries in the region suggested that the reforms had not adversely affected local businesses. Furthermore, the examination of farm diversification indicated that although diversification in the region was becoming increasingly popular this did not appear to be as a result of CAP reform.

Although there is an overall lack of literature on whether the MacSharry reforms were successful or not when implemented in the EU, this example of one Scottish region illustrates how the reforms worked out in practice, demonstrating varying degrees of success across different sectors.

Chapter 1

Introduction

1.1 Background to the Research

The agricultural policy of the European Union (EU) is the Common Agricultural Policy (CAP). The CAP was the first common policy of the EU, coming into existence in 1958 when a set of objectives for agricultural policy were produced following the Stresa Conference, although it was 1962 before policy objectives and the market organisation regulations were finally agreed¹. Grant (1997, p. 1) sees the CAP as one of the “cornerstones” of the EU since it became a common market. However, even from the time of its inception the CAP had its problems and the next two decades saw numerous reform proposals². Indeed Tangermann (1998, p. 12) argues that: “[t]he long and multifarious history of the CAP could easily be written up as a history of attempts at reforming this policy – mostly failed attempts, one should say”. Daugbjerg (1999), although admitting to slightly overstating the argument, argues that “... EC agricultural politics has been characterized by continuous crisis management” (p. 408).

The main problems facing EC policy-makers were low farm incomes (as a result of too many producers), commodity surpluses (such as the infamous butter mountains and wine lakes) and increasing budgetary costs under the CAP (accounting for almost half of the EU’s budget). The CAP was an expensive policy that did not meet its objectives. Although reforms in 1984 and 1988 (which introduced milk quotas and budgetary ‘stabilisers’) attempted to rectify these problems, such policy changes “cured symptoms rather than causes” (Tangermann, 1998, p. 12). It was the early 1990s before it finally appeared that true reform might be possible. Following a *Reflections* paper in February 1991 which highlighted the CAP problems (CEC, 1991a), the most radical reform package ever was proposed in July 1991 (CEC, 1991b) by Ray MacSharry, the Irish Agricultural Commissioner. Despite much opposition to the reforms, the Agriculture Council finally agreed to a modified package in May 1992, which became known as the ‘MacSharry reform’. The most radical reform of the CAP in all its history had

occurred embracing two main elements: substantial cuts in nominal support prices and direct aid linked to participation in less intensive production techniques.

Although much has been written on the subject of the MacSharry reforms, very little research has been conducted into the impact of these reforms on the different EU regions. This analysis examines these reforms and, undertaking a detailed study of one EU region, attempts to determine what impact such reforms had on agriculture and its related industries in that region.

1.2 Central Hypothesis

The general aim of this study is to assess and explain the impact of the 1992 reform package of the Common Agricultural Policy (CAP) in Grampian Region by means of empirical study of this impact. Essentially, the thesis argues that the MacSharry reforms were successful in Grampian Region with an overall positive impact upon agriculture and its related industries, concluding that further research is required, centring on a few, key research areas to open up research to new paradigms.

More specifically, the research hypothesis is that:

The aims of the 1992 MacSharry CAP reforms were to reduce rising budgetary costs and surplus production and to encourage more extensive farming methods, in turn protecting the environment and reducing surpluses. Whilst continuing to safeguard the basic CAP principles, two main policy instruments would be embraced: lower intervention prices and direct subsidy payments to farmers. In the case of Grampian it is hypothesised that between 1992-95, the overall effect on agriculture and on the industries indirectly related to agriculture was a positive one. The secondary hypothesis is that the consequences of change wrought by MacSharry on the existing pattern of agriculture was an acceleration of industry change as farmers increasingly engaged in diversification and a variety of alternative farming methods.

In order to test this hypothesis, use was made of both primary data and published and unpublished secondary data. The research focuses on whether the implementation of the MacSharry reforms was successful or not in Grampian Region, thus presenting one piece of evidence for the overall debate on whether the reforms when implemented, actually worked in practice.

At the time of commencement of this study, and indeed throughout its duration, it was found that there existed an overall lack of literature on the impact of the reforms throughout the EU as a whole. Although, as demonstrated in Chapter

2³, much has been written on the history CAP and more recently on the MacSharry reforms, the literature focuses mainly on issues such as the agricultural policy-making process, agricultural interest group interaction or EU-international relationships. For example, various theoretical models have been developed to explain agricultural decision-making such as public choice theory and policy networks and a large body of literature exists on these various approaches. For instance, Kay (1998) and Nedergaard (1994) employ the public choice paradigm to help understand the MacSharry reforms whereas other analysts prefer to use of policy network analysis, such as Daugbjerg (1999, 1998, 1997), Coleman and Tangemann (1999), Skogstad, (1998), Collins (1995) and Epstein (1997). Similarly, much has been written on the influence of agricultural interest groups as this lobby has enjoyed a central role in the agricultural decision-making process for a long time (Grant, 1990, p. 14). See for example, Daugberg (1998), Keeler (1996), Rieger (1996), Estrada (1995), Neville-Rolfe (1984) and Buksti (1983). The importance of the Uruguay Round GATT negotiations to CAP reform opened up the debate on the EU-international relationship and again, much literature exists on this subject. This issue is discussed briefly in Chapter 2 (Section 2.5).

There is therefore a wealth of literature on the above issues but a definite lack of literature on the implementation and subsequent impact of the MacSharry reforms in the EU. Where literature on implementation is available, it tends to focus on specific key areas. For example, many analysts examine the environmental impact of the reforms across member states⁴ such as Winter (2000), Delgado and Miranda (1999), Ward and Falconer (1999), Brouwer and Berkum (1998), Ascuito *et al.* (1998), Whitby (1996), Williams (1994) and Valladares (1993).

The essential importance of agriculture to Grampian region and the subsequent importance of Grampian agriculture to Scotland are demonstrated throughout Chapter 3. Nevertheless, a review of the literature on the impact of the reforms at a Scottish and, in particular, at a regional level suggests a relative neglect of the subject by previous researchers. This thesis therefore demonstrates a gap in the scholarship on the MacSharry reforms and consequently attempts to fill such a gap in the literature. This thesis does not focus on the agricultural policy-making process or interest group interaction but rather focuses on implementation of the reforms and how they have worked out in practice in Grampian Region. It tests out the effects of the MacSharry reforms in Grampian and establishes whether the

intended effects of the reformed policy actually occurred on the ground. Evidence is provided on how the change of policy led to changes in, for example, agricultural production and farm incomes. Therefore, on the evidence presented, an attempt is made to evaluate whether the implementation of the 1992 CAP reforms can be judged a success in Grampian. The research then goes a step further by examining the possible impact of the reforms on the regions agriculture-related industries, which are so closely linked to agriculture. Furthermore, in light of the above findings on reform and agricultural changes, an examination takes place of the extent to which CAP reform may have led farmers to diversify from traditional farming methods and consider alternative methods in order to generate additional income.

However, it must be noted that the research findings are affected by important unexpected impacts of other non-policy impacts, such as the devaluation of sterling, or changing consumer trends post-1992. Not all findings can therefore be attributed to the MacSharry reforms and conclusions throughout take note of such intervening factors.

1.3 Data Collection

1.3.1 Methodology

Because so little literature exists on the impact of the MacSharry reforms in the different EU member states, it is not surprising to find that little has been written on the effects in Scotland, and that even less evidence exists for Grampian. Since the time of commencement of this study a small number of contributions have been made to broad analysis at a regional level. Such work does not however, analyse the different sectors in depth. Thus, detailed study has not been made of the impact of the MacSharry reforms on agriculture and its related industries in Grampian. Data that is available at a Scottish level has tended to be mainly the research of agricultural economists. Indeed Kay (1998) and Grant (1997) both note that much of the writings on the CAP itself have been by agricultural economists and consequently, much of the secondary data referred to throughout this research is therefore work conducted by such writers.

The primary data collected for the main survey of Grampian farmers has used a methodology that has not been frequently employed to such a sample in the

region. On the advice of officials from key organisations with close links to the farming community, and who had first hand experience of poor response rates from other primary data collection methods, it was deemed appropriate to survey farmers in the region using a questionnaire conducted through face-to-face interviews. A postal questionnaire was highly likely to lead to very poor response rates as farmers are known to receive much 'junk mail' which, more often than not, is never opened. Similarly, a telephone survey was expected to result in a poor response rate. This methodology is explained in Chapter 5, with Section 5.3.1 presenting the justifications for using such a method. For example, implementing the questionnaire through face-to-face interviews guaranteed a high response rate, located the correct sample and ensured that all questionnaires were accurately completed.

When the research went further to explore changes to the agriculture-related industries and to examine levels of farm diversification in the region, it was found that secondary data was practically non-existent. In some cases data was found but could not be presented because of its sensitive nature and for reasons of commercial confidentiality⁵. Indeed, such low levels of published or unpublished material of any kind were found to exist on the subject of agriculture-related industries in Grampian that an additional survey had to be conducted on local companies in order to collect some form of data (Chapter 7). This survey was carried out by means of telephone contact, as opposed to mail or face-to-face contact. This was deemed to be the best data-collection tool because of its speed of data collection, its means of reaching all respondents and also its cost efficiency. In addition, practical concerns had to be addressed, for example, the geographical spread of respondents (see Glastonbury and MacKean, 1991). Indeed, Frey and Oishi (1995) favour the use of telephone surveys for their generally high response rates as busy schedules mean that response can be hard to get in today's society. Information was therefore collected on sales turnover and employment figures to enable an assessment and explanation of changes that had occurred in the agriculture-related industries over the period 1991-95.

As with the related industries, very little secondary data was found on farm diversification in Grampian, and no evidence appeared to exist post-1992. In order to determine the impact of CAP reform on farm diversification in the region, analysis was dependent upon the primary data collected in the main survey of local

farmers, a section of which had covered the extent and range of on-farm diversification projects and also established the main reasons for diversifying.

1.3.2 Period of Analysis

This section explains the rationale for ending the research analysis circa 1995. The period of analysis chosen for this topic covers the years 1991 to 1995, 1991 being chosen as the start of the analysis as this was the year prior to the MacSharry reforms being produced. In order to allow farmers an adaptation period, the MacSharry reforms were to be implemented gradually over the three marketing years 1993/94, 1994/95 and 1995/96. This study commenced in September 1993, the primary data collection was begun in October 1994 and completed in July 1995⁶. It was clear from the start that a cut-off point would be necessary as CAP regime changes were likely to continue over the duration of the research and to account for all developments would not be practical. The first reason for ending the analysis in 1995, the final year of the transitional period, was that as this last step of implementing the MacSharry reform was made, the next round of CAP reform was appearing. The *Agricultural Strategy Paper* (CEC, 1995) introduced by Commissioner Fischler, had as its main concern, the EU and Eastern enlargement and the agricultural implications for the CAP⁷. Of course other issues critically important to the future shape of the CAP were also examined in this Paper (three options for the future direction of the CAP were outlined) but these shall not be examined here⁸. Therefore, it was highlighted that further adjustment of the CAP was required. It was therefore deemed appropriate to stop the research at this point, thus covering the MacSharry reforms before the next round of CAP reform began. However, the decision to end the research period circa 1995 was predominantly influenced by events that unfolded in the latter part of the year. BSE (Bovine Spongiform Encephalopathy) which was discovered in 1986 (and better known as 'Mad Cow Disease'), came to everyone's attention late in 1995 when it was linked to Creutzfeldt-Jakob disease (CJD) and further linked some months later to New Variant CJD (NVCJD)⁹. EU beef consumption collapsed by around 10% across the EU and by up to 30% in some member states (Ingersent *et al.*, 1998). As UK farmers faced the prospect of a policy banning beef exports and saw a serious domestic decline in consumer demand for beef (Tilston *et al.*, 1993), regime changes became necessary. The beef sector thus saw the introduction of special

measures which reversed previous reforms (and added to budgetary costs). In November 1996 intervention limits were increased, a calf slaughtering scheme was introduced, and emergency aid payments were presented to producers to compensate for the negative income effects of BSE. In Grampian, the beef industry was hard hit by the BSE crisis. As the region accounted for 24% of Scotland's beef cattle in 1995, farmers were clearly affected by the crisis. Consequently, the meat processing industry was also critically affected. In March 1996 the sudden closure of three cattle marts in the region was announced (Forsyth, 1996). These marts – Cornhill, Maud and Laurencekirk - were part of the ANM Group and had been included in the data collection for this research¹⁰ (see Chapter 5). That same week 54% of the workforce at Scotch Premier Meat (a division of the ANM Group, based at Inverurie) were laid off, with most of the remainder going in the days that followed. This business had been included in the survey of agriculture-related industries in the region (Chapter 7). It was clear that the hard-hitting BSE crisis was to detrimentally affect both farmers and the agriculture-related industries. It was therefore obvious that any data collected after the crisis had erupted would distort the data collected previously. As it is, some of the secondary data collected for 1995 was slightly affected by BSE and this is accounted for where applicable. The decision to end the analysis c. 1995 was therefore influenced by two factors: the start of the next round of CAP reform in November 1995, and, in particular, the BSE crisis which hit the headlines around the same time.

1.4 Outline of the Thesis

Chapter 2 examines the historical development of the CAP between 1958-1995 through use of published secondary data. The chapter reviews the various stages from the postwar period which led to the creation of the CAP, in particular the Treaty of Rome (which set out the five objectives of the CAP) and the Stresa Conference. Such a review is however brief in comparison to the remainder of the chapter which goes on to examine the various reform proposals put forward by successive European Commissions since 1968. The first of these was the Mansholt Plan in 1968 which proposed major structural reform of agricultural production (CEC, 1968). This was a controversial plan that received widespread condemnation and opposition from all corners of the EC. Such opposition finally led to the

rejection of the Plan by the Council of Ministers although as part of a compromise reform plan, three socio-structural directives were adopted in 1972.

Throughout the 1970s, the Commission continued to produce periodic reviews of the CAP. This continued into the 1980s when criticisms were focused on the high budgetary cost of the CAP, the unfair distribution of subsidies where larger, more efficient farmers benefited, and over production which led to food surpluses and environmental damage. Policy changes in the 1980s were directed at such criticisms and each year saw another Commission publication on the subject. Two important steps taken in the 1980s were the milk quota reforms in 1984 and the establishment of the budget stabiliser regime in 1988. Such reforms did introduce wide-reaching changes, but were still far from adequate and by the early 1990s there was increasing pressure for reform, both internal and external to the EU. Internal reasons remained the same as in previous years: low farm incomes, high budgetary cost of the CAP, growing agricultural surpluses, high costs to consumers and environmental concern over farming methods. The main external reason for reform was the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) which had commenced in 1986 but was facing severe problems as a result of the CAP. Kay (1998) notes that the Uruguay Round had been part of the agenda of EU policy-makers since 1986: "... it is an obvious thesis that the Uruguay Round at different times was a causal factor in the MacSharry reform process" (p. 58). Similarly Grant (1997) argues that:

The GATT negotiations provided the impetus for the MacSharry reforms because the consequences of a complete breakdown in the economic relationship with the United States was too serious to contemplate (p. 196).

The importance of GATT to CAP reform is further illustrated by a brief discussion on the EU-international relationship. Although some argue that the reforms were driven by internal factors, it is shown that international pressure did play a large part in hastening reform. Here, the concept of three-level games is utilised in order to explain the EU/GATT negotiations.

The chapter then continues with an examination of the MacSharry proposals. The proposals were published in 1991 and examined the market organisations (cereals, oilseeds, protein crops, tobacco, milk, beef and sheepmeat) and accompanying measures which covered agricultural-environmental, forestry and early retirement programmes. The reactions to these proposals were similar to those of the Mansholt Plan 20 years earlier and it was the following year (May

1992) before the Agriculture Council agreed the reforms – after considerable amendments had been made. The chapter thus examines the MacSharry *proposals* for each of the market organisations (except tobacco) and the accompanying measures, and the *actual reforms* as agreed in May 1992. Discussion then turns to reactions to the reforms before briefly examining the early success of the reforms which quickly became evident as production fell and farmer's incomes began to rise. However, despite such success, there has been debate on use of the term radical to describe the reforms. Arguments are therefore presented which illustrate that the reforms were really moderate as opposed to radical or fundamental

Having established what the new CAP regime entailed, Chapter 3 goes on to give an overview of the agricultural situation in Grampian Region during the period 1991-95. Following a brief description of the region the chapter reviews literature on the impact of the MacSharry reforms in Scotland, but more specifically in Grampian. It was found that while some studies highlight the broad effects of the reform at a Scottish level, very few studies assess the impact at a regional level, and even fewer examine Grampian specifically. A similar picture emerges for the research carried out in Chapters 7 and 8 on agriculture-related industries and farm diversification. There is a lack of official statistics on these subjects and any research that has been conducted is not available in the public domain due to the confidential nature of the data. This review therefore highlights the fact that this topic is largely unresearched and unassessed at a regional level. The chapter then continues by examining the changes in Grampian agriculture prior to the implementation of the reforms and up to the final year of the transitional period. This involves an examination of changes to agricultural structure (area, land use, land tenure, number and size of holdings), agricultural land use (cereals, oilseed rape, set-aside and farm woodlands), livestock types and farm labour in the Region. It is of course stressed that not all changes occurring over this period can be attributed solely to CAP reform – non-CAP factors can clearly affect many sectors and such factors are mentioned where applicable.

Having portrayed the agricultural situation in Grampian during the implementation period of the reforms, the scene is further set in Chapter 4 by examining the extent of (and dependency on) EU financial aid in Scotland and Grampian following the reforms (concentrating mainly on EU direct income subsidies). An important element of the MacSharry reforms was to shift farm support away from high guaranteed prices towards direct income payments to

farmers. Farm prices were cut but farmers were compensated through direct subsidies. In addition to increased subsidy payments, UK farmers also benefited from the increased value of such subsidies due to the effects of the green exchange rate. After a grim 10 years farmers were enjoying increasing farm incomes. Increases in total direct subsidies (livestock and arable subsidies) were high in Scotland overall, but Grampian showed much higher than average increases. The analysis of levels of subsidies shows clearly that Grampian benefited enormously in financial terms from such increases in direct aid. However, it is seen that as a consequence of such increases, farmers' dependence on subsidies increased substantially. Furthermore, farmers' vulnerability to their potential withdrawal is exposed.

Chapter 5 describes the methodology chosen to collect data for the survey of farmers in Grampian in order to assess and explain the impact of the 1992 CAP reforms on agriculture in the Region. A total of 227 farmers were surveyed through means of a structured questionnaire conducted through face-to-face interviewing undertaken at various agricultural marts throughout the Region. This figure represented 5% of full-time and part-time farmers in Grampian. The chapter is split into two parts, firstly describing *how* the survey was implemented, and secondly justifying *why* the survey was implemented in this way. Such an analysis takes into account the questionnaire type and design, the pilot study, the sampling frame and the actual implementation of the survey. The main results obtained from implementing this methodology are then presented in Chapter 6 (the results relating to farm diversification are discussed more fully in Chapter 8). Data analysis focuses on frequency distributions, two-way cross-tabulations and significance testing by means of three-way cross-tabulations which explores various relationships between chosen variables. This analysis indicates that in general, the MacSharry CAP reforms had a positive impact on the majority of respondents to the survey. The analysis also makes it possible to determine which type of respondents were most likely to have benefited from the reforms. The overall success or otherwise of the MacSharry reforms in Grampian is therefore established.

Having determined the impact of the reforms on agriculture in Grampian, Chapter 7 attempts to establish the impact of the reforms on agriculture-related industries in the region. Clearly, any changes to agricultural policy can directly and indirectly affect the industries upstream and downstream of agriculture. Reforms in the arable and livestock sectors were forecast to have a major impact on such

industries. This chapter begins by defining and examining the agriculture-related industries in Scotland and Grampian. The particular CAP reform measures and the likely impact of these measures on the agriculture-related industries are examined, but in doing so it is acknowledged that various intervening factors also affect these industries in different ways. The relevant agricultural-related sectors are therefore examined individually in order to establish what changes may have occurred during the implementation period of the CAP reforms. However, as already noted, considerable problems were encountered when gathering data on these industries and it was therefore necessary to conduct a survey using a sample of companies from each industry. The survey was split into two parts, the first involving the food processing industry (meat processing, dairy processing, grain milling and whisky production) and other agriculture-related industries (production of animal feeds, manufacture of agricultural and forestry machinery and wholesaling of agricultural raw materials and live animals). Whereas many writers on this subject argued that the CAP reforms were likely to have an adverse effect on the agriculture-related industries, the data collected and analysed here indicates that the majority of such industries in Grampian actually experienced increased levels of production and employment during this period. This is the case even after accounting for the adverse effects of other external factors.

Chapter 8 attempts to determine whether the CAP reforms affected levels of farm diversification in Grampian, focusing on levels and types of diversification in the region. Diversification had become a necessity for a number of farmers by the late 1980s as income levels fell to their lowest in almost 40 years and markets became increasingly competitive. The MacSharry reforms further encouraged farm diversification as price support was cut. The chapter examines the extent of farm diversification in the UK and then goes on to examine government policies on the subject. This involves discussing the various initiatives of the 1980s, the Farm Diversification Grant Scheme (FDGS) and the 1992 MacSharry reforms. However, in examining farm diversification in Grampian, considerable problems in data collection were again encountered. As no official statistics on farm diversification exist, research on the topic is dependent on national surveys or case studies. In this case, a few studies have examined diversification in Scotland as a whole¹¹ but no research specific to Grampian exists. Data is available on responses to the FDGS in Grampian, but as this scheme came to an end in 1992, such data is outdated for the purposes of this research. The only data available on this topic is therefore that

collected in the survey as described and analysed in Chapters 5 and 6 respectively. This data allows for an examination of the types of on-farm diversification undertaken in the region and the reasons for diversifying. The different variables affecting involvement in diversification are also examined in order to explain participation levels in the region. Use of the survey evidence together with limited secondary data therefore shows that levels of diversification in Grampian were similar to those in the UK but slightly higher than those in Scotland as a whole. It was surprising to find, however, that among a variety of reasons given for diversifying, respondents never once cited CAP reform as a reason for doing so.

Having therefore examined the content of the MacSharry reforms and the consequential changes wrought upon Grampian agriculture and its related industries as well as determining the effects upon farm diversification, Chapter 9 presents the conclusions and implications of the research. Findings for each of the research hypotheses presented above are summarised and explained within the context of this and prior research examined in various chapters throughout the thesis. Whereas it was found that the findings supported the primary hypotheses (despite there being inconsistencies with some of the general literature), the secondary hypothesis relating to farm diversification was not supported. It is believed that the main reason for this is the level and value of subsidies that farmers received during this period which meant they did not have to consider alternative farming methods to generate additional income. By relating the findings back to the hypotheses, it is demonstrated that this thesis fills a gap in the literature on the topics covered, making a contribution to the overall knowledge on the effects of CAP reform, specifically at a regional level. The chapter then goes on to provide the implications of the research and consequently ends by suggesting a twofold need for future research. Firstly, other regional level studies are required to determine the overall effectiveness of the reforms throughout the EU. Secondly, the broader implication of the research is that the appropriateness of the original CAP objectives as set out in the Treaty of Rome must be questioned if the EU is to have an efficient and sustainable agricultural industry in the twenty-first century.

This chapter has laid the foundations for the thesis. It has introduced the research problem and research hypotheses. The methodology chosen for the research has been briefly described and the plan of the thesis outlined. A detailed description of the research therefore proceeds.

Endnotes

- ¹ The history of the development of the CAP is examined in Chapter 2, Section 2.2.
- ² These reforms proposed over a twenty-year period are discussed in Chapter 2 (Section 2.3).
- ³ Further reference to the literature on the impact of the reforms is made in Chapter 3 (Section 3.3).
- ⁴ The implementation of the EU Agri-Environment Regulation (2078/92) concerns others such as Emerson and Edgell (1999) who compare the different approaches applied to these measures in Ireland and Scotland and Wilson *et al.* (1999) who compare implementation in Spain and Germany.
- ⁵ For example, see Chapter 7, Section 5.3, which examines employment in agriculture-related industries in Scotland and Grampian. Census of Employment data is presented to show changes in agriculture-related industries in Scotland between 1991-95. Because of the small size of some of these industries in Grampian, e.g. grain milling, the equivalent data for the region cannot be shown for reasons of commercial confidentiality.
- ⁶ To obtain a representative sample, many visits to different sites covering a diversity of sales were necessary. An explanation of these visits is given in Chapter 5.
- ⁷ Following the collapse of the central economic systems in the East, it has been planned to integrate ten Central and Eastern European countries (CEECs) into the EU. These are: Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia.
- ⁸ For a commentary on these issues see Ingersent *et al.* (1998) and Thomson (1998).
- ⁹ See Whitby *et al.* (1996) on the discussions by Agriculture and Health Committees at this time.
- ¹⁰ The mart at Maud was subsequently re-opened later that year but the marts at Cornhill and Laurencekirk have remained closed.
- ¹¹ See Chapter 3, Section 3.3.

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Chapter 2

The Evolution of the Common Agricultural Policy 1958-1995

2.1 Introduction

This chapter charts the historical development of the Common Agricultural Policy (CAP) from its inception till the final implementation stages of the MacSharry reforms in 1995. This examination is conducted through a review of published secondary data including official publications of the European Commission. It outlines the important stages leading up to the creation of the CAP in 1962 such as the Treaty of Rome (in particular Article 39 which sets out the CAP objectives) and the Stresa Conference (Section 2.2). The chapter then goes on to examine briefly some of the plethora of reforms spanning from the late 1960s to the late 1980s and in doing so assesses the successes and failures of the CAP objectives as set out in the Treaty of Rome (Section 2.3). The reform debate is continued in Section 2.4 where internal and external reasons for reform are examined. Particular attention is then paid to the importance of the Uruguay Round of GATT negotiations between 1986-92 and the EU-international relationship (Section 2.5). The bulk of the chapter then goes on to examine in detail the MacSharry CAP reforms as proposed in 1991 (Section 2.6) and finally introduced in May 1992 (Section 2.7). Although there had been many previous reforms, this was hailed as the most radical reform to take place in the thirty-year history of the CAP. Section 2.8 begins with a short discussion on the overall reaction to the MacSharry reforms and a brief look at their early success. The issue of further reform following MacSharry is then touched upon before closing with an examination of the debate on whether these reforms really were radical or whether they were just moderate reforms which did not go far enough in solving the agricultural problems of the farming community.

It has been argued that the rationale for government intervention in agriculture can generally be classified under one of three headings: concern for food supplies; economic benefits from agricultural policy; the welfare of the rural population (Marsh and Swanney, 1980). Agricultural protectionism was first established in many countries in the 1930s. West European Governments had not intervened much in farming until the economic depression of the 1930s when a marked increase in

production coincided with a decrease in actual demand, resulting in world market food prices falling to very low levels¹. Further state intervention in farming took place during the Second World War when governments moved towards direct management with the introduction of comprehensive systems of price controls and guarantees in order to protect their farmers and ensure adequate supplies of food. By 1947 Europe was facing a crisis as food shortages became severe and millions faced starvation. The war had disrupted agriculture and governments were keen to greatly increase their agricultural output. By 1948 most West European governments had drawn up detailed plans to achieve this by 1952 (OEEC, 1948; ECE, 1949).

The postwar period saw change with the technological revolution in agriculture which resulted through research, experimentation and large scale investment. Farms were mechanised; fertilizers were applied to soils planted with improved seeds; herbicides, fungicides and insecticides came into use; and livestock strains were improved by careful breeding, helped by means of artificial insemination and careful culling of herds and flocks (Coppock, 1963). Indeed Coppock (1963, p. 4) argued that "[i]n a few short years much of Europe's farming was changed from a kind of handicraft to an industrial operation". With the vast numbers of small farm operators and with agricultural technology continuing to improve², food production began to increase. Because food shortage was no longer a problem, individual governments became more concerned with the protection of farm incomes. They supported farm prices to enable their farmers to stay on the land with reasonable incomes and adopted policies to protect the farmers from foreign competition. Their actions, together with the technological revolution, resulted in rapid increases in output and a gradual build-up of surpluses. This meant an accumulation of physical surpluses in the traditional exporting countries, and high prices for consumers in the importing countries. National agricultural policies were causing serious problems and the need for a common market in food products became increasingly clear.

2.2 Agriculture and the EEC

After the Second World War a plan was conceived by the French to assist the recovery of the German economy whilst at the same time ensuring future peace for Europe. This was to be a common market in coal and steel ensuring equal access by participating countries to these fundamental products, controlled by a supranational

authority - known as the High Authority. The Schuman Plan was announced in May 1950 and other countries were invited to join. The Benelux countries (Belgium, Netherlands, Luxembourg) and Italy quickly joined but the UK declined, one reason being her opposition to the creation of any supranational institutions. The European Coal and Steel Community (ECSC) was thus created under the Treaty of Paris in 1951, establishing a 'Common Market' in coal, steel and iron.

The desire to promote further integration came from the Benelux countries who wished to establish a political and economic union. This was accepted by the other five states in the ECSC and as a result an inter-governmental committee was set up to prepare for treaties chaired by the Belgian Foreign Minister, Paul-Henri Spaak. The report of the committee's findings, commonly known as the Spaak Report, was drawn up in 1956. It formed the basis of the Treaties setting up the European Economic Community (EEC) and the European Atomic Energy Community (Euratom) which entered into force on 1 January 1958. Although the Spaak Committee had encountered problems with the subject of agriculture, the Six unanimously decided that agriculture had to be included in the common market in order to balance trade advantages between the member countries. For agricultural products, as in other sectors, obstacles to trade were to be eliminated over the twelve to fifteen year transitional period. At the end of this period, all national measures would have had to be replaced by Community regulations. It was, however, recognised that the creation of a common market would not eradicate the problems which demanded market intervention at a national level. The Report thus determined a number of objectives for a future agricultural policy which included: the stabilisation of markets; security of supply; the maintenance of an adequate income level for normally productive enterprises; and a gradual adjustment of the structure of the industry (Fennell, 1987; Fearne, 1991). The importance of these four objectives is indicated by their reflection in Article 39 of the Treaty of Rome which sets out the objectives of the CAP.

2.2.1 The Treaty of Rome

The Treaty of Rome was the document which established the European Community in 1958 and has been hailed as one of the most important documents in Europe's history (Andrews, 1973). The Treaty set up the institutions of the Community, including the Commission, the Council of Ministers, the European Parliament and the European

Court. There are ten articles in the Treaty of Rome which apply directly to agriculture (Articles 38-47). At this time (1958) 15 million people were employed in farming, amounting to 20 per cent of the total working population in the six signatory countries of the Treaty of Rome. There were 6.5 million holdings which were small and fragmented and agricultural incomes were approximately half those in other sectors. The land differed from region to region, varying from fertile lowlands to barren mountainous areas. Furthermore, different policy instruments and attitudes prevailed among the Six members (Hill, 1984). It was these conditions in the agricultural sector that had to be addressed.

Article 38 required that "the Common Market shall extend to agriculture and trade in agricultural products". Article 39 sets out the objectives of the CAP similar to those adopted by all the developed nations, but argued to be the most cogent and complete summaries for agricultural policy ever made (Ritson, 1991; Fennell, 1985; Ritson and Fearn, 1984). These objectives have remained unchanged since 1958 and are rarely if ever discussed (Fennell, 1985, p. 259). Article 39.1 thus contains the following objectives:

- (a) to increase agricultural productivity by promoting technical progress and by ensuring the rational development of agricultural production and the optimum utilisation of the factors of production, in particular labour;
- (b) thus to ensure a fair standard of living for the agricultural community, in particular by increasing the individual earnings of persons engaged in agriculture;
- (c) to stabilise markets;
- (d) to assure the availability of supplies;
- (e) to ensure that supplies reach consumers at reasonable prices.

In addition, Article 39.2 requires that in carrying out these objectives social structures and regional disparities should be taken into account. The success or failure of the CAP was to be determined by the extent to which it achieved these five objectives (see Section 2.3).

As well as these five objectives the CAP is also characterised by its three fundamental principles. These principles on which European agricultural policy was to be organised were set down ambiguously in the early 1960s, but it was made clear by some Member States that any reform of the CAP must not call into question the three interlinked principles upon which it was founded:

- 1) *Market Unity* - there should be common farm pricing throughout the Community, a common system of marketing and a single market for farm products;
- 2) *Community Preference* - there should be preference for EC products, allowing Community producers to be better placed than their competing overseas counterparts;
- 3) *Financial Solidarity* - which required common financial solidarity for CAP policies. This was reflected in the establishment of the European Agricultural Guidance and Guarantee Fund (EAGGF), more commonly known by the acronym FEOGA, from the French title Fonds Europeen d'Orientation et de Garantie Agricole. This Fund works on a common basis regardless of the product or of the Member States concerned.

Article 43 outlined the process by which a common agricultural policy was to be established. It required the Commission to submit proposals for the working out and implementing of a common agricultural policy which would achieve the objectives set out in Article 39 to the Council of Ministers before June 30, 1960 when the Treaty came into force. It was the modified version of this voluminous report (Commission of the EEC, 1960) that formed the basis for the CAP finally adopted by the six Member States of the EEC in January 1962. The foundations of the CAP had thus been laid (Fennell, 1997).

2.2.2 The Stresa Conference

Progression towards a common agricultural policy was to occur in three stages as determined by the Treaty of Rome. Three years were apportioned to the first stage when policies were to be formulated and agreed. The second stage was to last until 1970 when these policies were to be introduced. By the third stage, the policy was to be fully in force in a unified market.

As part of the first stage of progression, a conference convened by the Commission was to take place at Stresa, Italy, in July 1958, chaired by Sicco Mansholt. This conference was attended by officials of ministries and representatives from the farmers' organisations and the food industry. Mansholt was doubtful about the usefulness of price policies and expressed concern over the potential creation of surpluses, inefficient agriculture and ever-increasing costs. Farming representatives on the other hand were more concerned with the principle of the family farm remaining the foundation of agriculture in the Community. The Commission itself made it clear that it was looking for a policy that protected the family farm and supported farm incomes while at the same time avoiding the build-up of surpluses and

sustaining trade links with third countries. Wide differences of opinion between the delegates were therefore highlighted at the conference but an agreed set of objectives for agricultural policy was eventually produced³.

Following the Stresa Conference, the Commission was given the task of proposing policy measures for the achievement of these objectives which were already stated implicitly in the Treaty of Rome. This task was duly completed, and after presenting their proposals to the Assembly (since re-named the European Parliament) early in 1960, they were eventually approved in June of that year. Throughout 1961 a number of draft regulations embodying the structure proposed by the Commission were issued. These laid out the framework of support prices, import levies and export refunds, intervention buying and so on, which were all ratified at a later date. In July 1961 the draft regulations for cereals, pork, eggs, poultry, fruit, vegetables and wine were issued, but it took six months for the Council of Ministers to finally agree, on January 14 1962, to adopt a series of regulations giving legal effect to the levy system and instituting a common market organisation for each product. The key system took effect from July 1, 1962.

It can therefore be said that the CAP was created in 1962 - the year when the policy objectives and the regulations outlining the market organisations for the various products were agreed. The CAP had finally emerged through many years of debate and intense negotiations. However, the policy could not begin to operate effectively until the primary issue of common pricing was resolved.

2.2.3 Common Prices

The CAP entered its final phase with the transition towards common prices in order to create a single market for agricultural products in accordance with the first principle of market unity. This was to take place gradually in order to ease disruption to production and markets. With such a wide divergence between national prices the major problem was deciding what the common prices were to be. Although this was no easy task, common price levels were eventually agreed by the Council in December 1964 with the unified prices coming into effect on 1 July 1967. These prices set for agricultural products tended to be quite high as the various Ministers of Agriculture found it easier to agree on prices which were favourable to their own farmers and would raise rather than lower their national price levels. These higher price levels guaranteed Community farmers a 'satisfactory' level of price support. This resolution,

however, was to lead to a steady increase in production which inevitably led to the problem of agricultural surpluses. The term given to these common prices was the Unit of Account (UA) with each national currency bearing a fixed relationship (exchange rate) to it. These prices, applicable throughout the Community, are reviewed each year by the Council, acting on proposals from the Commission. Thus each year at the time of price review agriculture hits the headlines for these price decisions have an impact on both the incomes of Community farmers, and on food prices in the shops which in turn affects consumers.

In 1967 the CAP was nearing completion, but what should have been a decade of achievement was marred by the knowledge that the policy was in need of fundamental alteration. In order to give farmers a 'fair' standard of living, a policy of high prices had been introduced which, it is argued, "was treating the symptoms of the disease rather than attempting a cure" (Hill, 1984, p. 31). Inadequate consideration was given to the fact that low incomes were the result of too many farmers on the land. Raising incomes through further price rises would only result in the growth of agricultural surpluses. The CAP therefore required radical changes, in particular a reduction in the number of producers.

2.3 An Abundance of Reforms

The period after 1968 has been referred to by Hill as "the period when the CAP passed from a difficult childhood to an even more difficult and controversial teenager" (1984, p. 32). It was clear by the late 1960s that the CAP was far from perfect and policymakers quickly realised that change was needed. The Commission, concerned with the need to correct some of the failures of the CAP, realised that the overall structure of the farming industry needed altering. With production rates already high, the system of guaranteed prices without limitations on production was causing chronic problems. Thus, since 1968 successive European Commissions have put forward numerous proposals for adaptation of the CAP, as have other CAP specialists⁴. Marsh argues that "[p]roposals to reform the CAP are almost as old as the policy itself" (1989, p. 157). Similarly Hill observes that "the CAP suffers two types of surpluses - one of commodities, the other of reform proposals" (1984, p. 119). It is not possible to look at all of these in detail but an attempt is made below to examine some of the main reforms proposed by the Commission over the twenty year period from 1968. It must

be noted that changes in the EC economy during this period played a major part in these reforms. Enlargement, new technology and economic growth each had an impact on the CAP. The first phase of enlargement increased the six to nine when in 1973 the UK, Ireland and Denmark joined the EC. Spain, Portugal and Greece followed in the 1980s. It is argued that failure of the Policy to reform in the way advocated by many can be blamed in part on the fact that during the 1970s and 1980s the CAP has had to meet the interests of these six, nine and then twelve member states (Hubbard and Ritson, 1991)^{5, 6}.

2.3.1 The Mansholt Plan

Structural reform was clearly necessary to solve some of the problems of the CAP. The Commission, in particular Sicco Mansholt, believed that the solution lay in reducing both the area of agricultural land and the number of people working in agriculture. Price cuts were no longer feasible so those who were to remain on the land would have to be efficient enough to be able to earn a satisfactory income without excessive prices.

Mansholt had already warned farm ministers at the Stresa Conference of the problems of a price support system (see Section 2.2.2). In 1968, as vice-president of the Commission, he put forward proposals for reforming the structure of agricultural production, popularly known as the Mansholt Plan (CEC, 1968). The plan aimed to remove 5 million from the farm population between 1970-80, and to reduce the area of agricultural land by 12 million hectares over the same time period. Fewer farms and farmers would create larger, more efficient farms and increased farm incomes which would reduce the need for high market prices. Lower price levels would mean savings and a reduction in food surpluses by the mid-70s, as well as a reduction in FEOGA support costs in the long term. To achieve this voluntary exodus, farmers would be offered various financial incentives for early retirement, retraining for other occupations, and modernisation of farms. This was the first reform proposal to advocate 'get out or get bigger' as opposed to previous suggestions of 'stay little - here is a bit extra to supplement your income from farming' (Hubbard and Ritson, 1991).

The plan caused more controversy in the EC than any other programme in its history. It caused intergovernmental and intragovernmental disputes as well as conflicts of interest between the various Community institutions such as the Commission and the Council of Ministers. Furthermore, it caused extreme

controversy among local, regional and national interest groups. The French and German farm groups were particularly violent in their reactions to the proposals⁷. The Committee of Agricultural Organisations in the European Community (COPA), which groups all the national farming organisations in the Community, strongly criticised the Plan, reiterating the feelings of the farmers. COPA argued that the Plan did not include any overall trade plan for agricultural products; it criticised the unwillingness of the Commission to protect its traditional markets; and it voiced its criticism of alleged over-optimism about the number of farmers proposed to leave the land and be retrained for other occupations (Rosenthal, 1975). When the time came for the agricultural prices to be fixed for the 1971-72 season, COPA were demanding general increases in farm prices, claiming that the Community authorities in Brussels had underestimated farmers' discontent. When the Council of Ministers met in Brussels on March 23, so did over 80,000 discontented European farmers in a violent mass demonstration in the streets of Brussels⁸. Mansholt, dubbed the 'peasant killer', was hung in effigy. As a result of all the opposition and resentment towards the Plan from farm organisations throughout the Community, it was largely rejected by the Council of Ministers.

This was the first attempt at 'radical' reform of the CAP and it largely failed⁹. However, the Mansholt Plan was not completely wasted. Both opponents and defenders of the Plan knew that agricultural structures had to be reformed and agreed that previous Community policies had led nowhere. As part of a compromise reform plan, three socio-structural directives were adopted in 1972. These concerned the modernisation of farms (CEC, 1972a), the cessation of farming and the allocation of agricultural land for structural improvement (CEC, 1972b), and the provision of socio-economic guidance (CEC, 1972c). The impetus behind these directives was to increase farm incomes by reducing the number of farms and creating larger, more efficient farms. However, as an attempt to reform the CAP, Mansholt's notable plan for structural reform was rejected and price policies within the Community remained at the center of agricultural support.

Following the Mansholt Plan, the Commission produced periodic reviews of the CAP. The first of these, *Improvements of the Common Agricultural Policy* (CEC, 1973) addressed the problems of market imbalance and excessive costs in the agricultural sector and put forward some proposals, but nothing came of them and so no real solutions were offered. A second document produced in 1975, *Stocktaking of the Common Agricultural Policy* (CEC, 1975) looked at the problems of the policy in

relation to the objectives laid down by the Treaty of Rome. The following problems were recognised: price policy had failed to reflect the market situation; structural policy had been unsuccessful in increasing production and reducing regional differences; Monetary Compensatory Amounts (MCAs) were threatening market unity¹⁰; and budgetary costs under the CAP continued to increase. But the original five objectives were restated and an attempt was made to prove that the CAP had, more or less, stuck to its original objectives, so although the problems had been recognised, again no real answers were offered.

Although there were further reform proposals, it was 1979 before the Commission produced another document which attempted to modify the CAP. *Changes in the Common Agricultural Policy to Help Balance the Markets and Streamline Expenditure* (CEC, 1979) was produced in response to growing CAP expenditure and an increase in structural surpluses. The two main proposals to curb this growth were to move towards closer market balance and to get producers involved in the cost of surplus disposal. However, it took a year before specific measures were proposed to achieve these goals.

2.3.2 Reform Proposals in the 1980s

Critics of the CAP in the 1980s focused primarily on the budgetary cost of the agricultural policy which has been rising steadily: the amount spent on agriculture from the EC budget rose from ECU 4.7 billion in 1976 to ECU 36 billion in 1992 (Gibbons, 1992; CEC, 1993a). As Grant (1997, p. 75) notes "... reform became necessary because the CAP threatened to break the Community's budget". This rise in spending had been caused mainly by the need to stockpile surpluses and then pay subsidies to enable them to be sold on the world market. The Community's 'own resources' clearly failed to match the cost of the Policy. Another major criticism was the way in which subsidies were distributed among farmers. The price guarantee system had ensured that any price increases benefited the larger, more efficient farmers substantially more than the small farmers and those in less favoured regions of the Community. By the late 1980s, more than 80% of EC spending went to only 20% of the Community's farmers (CEC, 1993a). Other criticisms included over-production, leading inevitably to food surpluses, the abuse of food subsidies and environmental damage caused by intensive use of fertilisers and pesticides (Gibbons, 1992). These criticisms did not go unnoticed and policy changes did emanate during the 1980s.

In 1979 the UK government, alleging that their share of financing the Community budget was unfairly large, sought a reduction in their net budgetary contribution. This caused problems the following spring when agricultural prices had to be agreed. Temporary budget agreements ensued but a more permanent solution was required. The Commission was therefore mandated to produce reform proposals to solve the budgetary problem under the 30 May 1980 Mandate. Three documents were published in response: *Reflections on the Common Agricultural Policy* (CEC, 1980), *Report on the Mandate* (CEC, 1981), and *A New Impetus for the Common Policies* (CEC, 1982), which included a section 'Guidelines for European Agriculture'. *Reflections* examined the CAP in relation to its original objectives and stated that "the Common Agricultural Policy has broadly achieved its main aims" (CEC, 1980, p. 26). The *Report* and *Guidelines* were in agreement: "the objectives of the Treaty of Rome - be it security of food supplies, satisfaction of consumers' requirements, increased production or higher farm incomes - have been achieved (CEC, 1981, p. 11).

2.3.3 CAP Objectives: Success or Failure?

The extent to which the CAP achieved its five objectives as set by the Treaty of Rome would determine the success or failure of the CAP. As Burtin (1987) argues, "[t]he success or failure of any policy must be judged in terms of the achievement of its objectives" (p. 64). In examining the five objectives, it is found that by the early 1980s, some had been achieved while others had not, and some had only been achieved at a very high cost to taxpayers and consumers (see Fennell (1985) and Grant (1997)). It must be realised, however, that whatever the degree of success or failure, not all is perhaps attributable to the CAP.

(a) Increased Agricultural Productivity

Despite a fall in the number of people employed in agriculture¹¹ and a reduction in the number of farms, the efficiency and productivity of farming had increased. This was mainly attributable to technical and scientific progress - factors which are independent of the CAP. However, increased productivity meant major increases in output which resulted in huge increases in yields. By 1992 the Community's farm output was rising by an average of 2% a year while demand was either stable or falling (CEC, 1993a).

Article 39 emphasised labour productivity which has substantially increased as a result of these vast increases in output and great declines in the agricultural labour

force. However the CAP had failed in its attempts to ensure 'the rational development of agricultural production and the optimum utilisation of the factors of production'. These had not been accomplished because of the inordinate reliance on price support and the uneven distribution of support among products. The CAP had therefore failed to fully achieve this objective.

(b) A Fair Standard of Living for the Agricultural Community

It is hard to determine what constitutes a 'fair' standard of living, as it was not expressed when this objective was established. It is clear however that the CAP had failed in this area because agricultural incomes remained substantially below incomes in other sectors, despite the large public and private cost of the CAP. This was because the price mechanism raised revenues in proportion to output, so the larger more efficient producer got the most support. It was therefore the rich efficient farmers who benefited from the CAP as opposed to the poorer and less-advantaged whom the policy was designed to help. CAP support prices were paid to 'all' producers regardless of need or efficiency. As a result, in the late 1980s, as mentioned above, more than 80% of EC spending went to only 20% of the Community's farmers - generally the bigger and more efficient ones (CEC, 1993a). This system had also resulted in income disparity at a national and regional level as well as significant variations between farms of different sizes and types. The Commission's *Reflections* noted that the CAP had increased these disparities: "the common market organisations tend to favour the more well-to-do producers, who are mainly concentrated in the richer regions" (CEC, 1980, p. 8). Clearly the CAP had failed to achieve this objective, indeed it could be argued that it succeeded in increasing the disparities within agriculture.

(c) Market Stability

The CAP succeeded in stabilising European markets through its interventionist system, ironing out price variations and swings in quantities produced. Stability is desirable to farmers as it enables forward planning and thus allows them to invest efficiently. However, too much stability affects the price mechanism in that price reduction cannot be used to dispose of temporary surpluses, thus adding to the general surplus problem. To have achieved price stability could therefore be regarded as a 'mixed blessing' (Hill, 1984).

(d) Assuring Availability of Supplies

The CAP ensured security of supply for the main categories of food products both in terms of quantity and quality, but at a very high price. Guaranteed high food prices encouraged increased production, leading to over-production in many agricultural products. Surpluses had become a major problem facing the EC. The Community was producing close to 100% of its needs for cereals, beef, dairy products, poultry meat and vegetables in 1973. Further increased productivity meant the Community was producing sizable surpluses in these sectors. For example, the Community was producing 20% more cereals than it needed, and a proportion of the surpluses ended up as the infamous 'wine lakes', 'beef mountains' and 'butter mountains'. Due to high EC prices they could not be exported profitably and so considerable sums of money had to be spent on surplus disposal. This situation was perhaps preferable to food shortages, but was it a sensible way to ensure security of supply? It was argued that a more sensible approach would be to maintain and improve good trade relations with other food producing countries (Consumers in the European Community Group, 1984), as the EC is heavily dependent on imports for various food products such as tropical products, fruit juices and oilseeds for animal feed. This objective was therefore achieved, but at a price.

(e) Reasonable Consumer Prices

As a result of the CAP, consumers benefited considerably from a much wider choice of foods, but at what price? The existence of surpluses indicated that consumers in the Member States were paying higher prices than necessary to obtain the goods they desired. The CAP had resulted in high food prices with those in the EC significantly above world market prices as a result of the price support policy. Furthermore, as it is consumers who pay the bulk of the cost of the CAP, low-income consumers (who spend a higher proportion of their incomes on food compared to other consumers) were especially disadvantaged. What is reasonable was not defined and so tends to be a matter of opinion, but could it really be said that consumer prices were reasonable?

Having examined the success or failure of the various CAP objectives it is interesting to note how the Commission viewed the situation, stating in the *Report on the Mandate* that: "security of food supplies, satisfaction of consumers' requirements, increased productivity and higher farm incomes have been achieved" (CEC, 1981, p.

12). Perhaps, in light of the above observations, it is more realistic to quote Pearce (1981) who, writing at the same time, argued that:

not relative to the rest of the economy ... market stability and security of supply have been taken to ridiculous and damaging extremes, and ... consequently consumers have paid prices which were not reasonable (p. 35).

2.3.4 Further Commission Responses

Although *Reflections* had stated that the CAP had broadly achieved its main aims, it did realise that problems existed with the Policy, especially in regard to surpluses and the fact that the richer farmers and regions were the main beneficiaries of the CAP. In response, three solutions were put forward: the regulation of market organisations (i.e. a stop to high and open-ended guaranteed prices); a new approach to export policy; and the modification of structural policy to remove regional disparities. Nevertheless, the Commission made it clear that although slight changes were necessary, radical reforms were not.

In 1983 the Commission took action regarding the budget issue when they published a document laying out further policy changes for agriculture (CEC, 1983). Changes advocated included a restrictive price policy, the introduction of 'guarantee thresholds' to limit the degree of support for commodities in surpluses, and the phasing out of new MCAs. Another step on the road to reform was the introduction of milk quotas in 1984¹², when dairy support amounted to 30% of all guarantee expenditure. These production quotas were introduced to curb milk production and raise additional revenue for the EC. These quotas supplemented the initial co-responsibility levies applied to the milk lake in 1979, their aim being to restrict the volume entitled to support and to make it unprofitable for farmers to continue to expand output. The principle was to make producers pay part of the cost of surplus storage and disposal. Co-responsibility levies were really a covert reduction in prices which were more acceptable to farmers than direct price reductions¹³. However, as Kay (1998) notes, milk surpluses had been emerging in 1969 and growing substantially each year. Although the Mansholt Plan predicted such surpluses in the late 1960s, and milk quotas had existed as a solution from that time, it took 15 years for such quotas to be introduced. Kay (1998) thus argues:

The milk sector shows how the agricultural policy-making apparatus of the EU produces solutions or CAP 'reforms' only when the problem is immediate; that is, there was a possibility that the Community could have run out of money in 1984 in the absence of measures to curb the cost of financing milk surpluses (p. 37).

In 1985 the Commission, under its new Agriculture Commissioner, Frans Andriessen, launched a major review of the CAP. It produced a Green Paper entitled *Perspectives for the Common Agricultural Policy* (CEC, 1985a). This consultation document was followed by Commission guidelines in *A Future for Community Agriculture* (CEC, 1985b). These documents proposed new measures for the future direction of the CAP in light of the problems it was facing. The notion of price discipline was backed through the system of co-responsibility levies for cereal and other products. However, it is argued that "[o]ne of the most wide-ranging reviews of the options for policy came up with a narrow view of the options (Moyer and Josling, 1990, p. 64). By 1986 it was clear that action taken to increase Community resources had not solved the budget cost problem and costs of the CAP were continuing to escalate. In April 1986 the Commission proposed a package of structural policy measures, including set-aside (taking land out of production) policies (CEC, 1986). A co-responsibility levy was introduced for cereals and in December a cut in the milk quotas of 9.5 per cent and restrictions on the beef intervention price was introduced.

In 1987 the Commission published a set of proposals for direct income aids to compensate farmers who were losing out from the reformed prices policy (CEC, 1987a). Included in the proposals were a community farm income aid system, a framework for national aids and a community "pre-pension" scheme for farmers over 55 (National Consumer Council, 1988). Later in the year, with CAP costs at a critically high level, the Commission submitted a package of budgetary stabilisers designed to control CAP spending (CEC, 1987b). The system was designed to penalise farmers for overproduction by imposing automatic price cuts if they exceeded the ceiling level of production determined by the Council (the maximum guaranteed quantity or MGQ). Other agricultural stabilisers introduced included increased co-responsibility levies, an extension of milk quotas, and guarantee thresholds for the other main EC products. In February 1988, after intense discussions, agreement was reached on budgetary discipline and the stabiliser system. Agreement was also reached on the arable set-aside policy. Those farmers who set-aside at least 20 per cent of their arable land for at least five years would be entitled to compensatory amounts of between 100 ECU and 600 ECU per hectare. If farmers set-aside at least 30 per cent of their land they would be exempted from the co-responsibility levy on 20 tonnes of cereal in addition to compensation per hectare. Wide-reaching changes therefore took place in 1988 with the introduction of budgetary discipline and the stabiliser system but in spite of these changes surpluses continued to accumulate and

budgetary costs remained high. Within three years the 1988 reform was already proving to be inadequate (CEC, 1993a).

To achieve the original CAP objectives as set out in the Treaty of Rome, the EC had introduced a system of paying farmers a guaranteed price for their products which could not be absorbed by the market. The impetus behind this was to maintain farm incomes and provide stable agricultural markets. The system was intended to be self-regulating. During times of surplus, stocks would be brought into intervention and then released back onto the European market during periods of shortage. However, the price support system for farmers was linked to volume of output and therefore benefited the larger, more efficient farmers. Furthermore, subsidies were paid per unit of output and per head of livestock and so again the larger farmers benefited. All of this has encouraged the farmers to use their land intensively. And so although the CAP originally intended to support marginal farmers, the EC in its attempts to solve the problem of surpluses by lowering guaranteed prices to farmers actually succeeded in unfavourable support to small farmers. The key to reform appeared to be lower prices - much lower prices.

2.4 The Continuing Reform Debate

The reforms of the 1970s and particularly the 1980s clearly failed to solve the problems facing the EC's agricultural policy. Indeed some argue that they exacerbated the problems (Koester and von Cramon-Taubadel, 1992). The results of a failed CAP and universal discontent demonstrated that the policy was in urgent need of radical reform. However, although the imperative behind the reforms of the 1980s had been budgetary crisis, by the 1990s a new impetus for reform had emerged: the Uruguay Round GATT negotiations. Therefore in the early 1990s, pressure for reform was both *internal* and *external*¹⁴.

(a) Internal Reasons for Reform

1. Despite inflation and greatly increased Community and national spending, farm incomes remained static in the 10-year period preceding reform, failing to keep pace with income growth in other sectors of the economy.
2. Despite the decline in farm incomes, the budgetary cost of the CAP continued to rise. During the 1980s EC agricultural spending increased by approximately

50% in real terms (Haynes, 1992). From 1989-92 the agricultural budget rose dramatically from 24.4 billion ECU to 35.4 billion ECU (de Lacroix, 1992)

3. Surplus production was one of the major defects of the CAP. Many surplus agricultural products, particularly cereals, beef and dairy produce, could not be sold profitably in international trade.
4. Under the CAP European consumers were paying substantially more, sometimes double the price, for products found in other developed economies. Numerous studies showed that the CAP represented an implicit tax on food of approximately 15% (Haynes, 1992).
5. In recent years environmental concern over modern farming methods has increased. Farmers were encouraged into more intensive farming but at the same time they were also encouraged to do the opposite through rural environment programmes which award grants to selected farmers in all EC countries to farm in environmentally beneficial ways. This clash of sequences suggested that there was something fundamentally wrong with the policy.

(b) External Reasons for Reform

6. The EC's trading partners were concerned over the way their markets were being pillaged by highly subsidised EC exports. At the centre of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) negotiations, which commenced in September 1986, was the dismantling of agricultural protectionism. The collapse of the negotiations in December 1990 (when the round was scheduled to be completed) and the attempts to restart them which followed, all centered around EC agricultural policy, in particular the dismantling of agricultural protectionism.
7. Pressure for reform further emerged as a result of the political changes in Central and Eastern Europe. The problems faced by the newly democratised countries included moving from a centralised system to a market economy. These countries required access to the EC agricultural market to allow reductions in import levies and increased agricultural export quotas.

This was the context in which the Commission reopened the reform debate and set out to pursue a more restrictive policy. However, before examining the reform package proposed in February 1991 and the actual reforms as agreed by the Agriculture Council in May 1992, it is important to note the importance of the Uruguay Round of

the GATT negotiations. These negotiations commenced in 1986 but it was seven years later in December 1993 that the trade deal was finally concluded, with the agreement coming into force in 1995. EC agricultural policy was at the center of the problems arising in the negotiations.

2.5 The Uruguay Round GATT Negotiations

2.5.1 Issues and Negotiations, 1986-1992¹⁵

The EC's trading partners, in particular the USA and the Cairns Group¹⁶, were concerned over the way their markets were being affected by highly subsidised EC exports. The Cairns Group was against agricultural protectionism which distorted world markets and, although opposed to US agricultural protectionism, they joined the USA in a vigorous campaign against the EC's CAP and against Japanese protectionism (Swinbank and Tanner, 1996). They strongly objected to the level of protection against agricultural imports and, even more so, the EC's use of variable export subsidies that depressed world prices and destabilised markets, particularly in relation to cereals, meat and dairy products. The EC was therefore under substantial pressure from the international community to conform.

The multilateral trade talks began in Punta del Este in Uruguay in 1986¹⁷ when the 108 signatories of GATT established that agricultural protectionism was too high, resulting in worldwide economic damage at unacceptable levels. A commitment was therefore made to negotiate sizable and progressive reductions in all forms of trade distorting support. The EC thus committed itself to work towards the dismantling of agricultural trade barriers, further committing itself at the Venice economic summit in 1987. However, it was politically necessary for some Member States to support their farmers and so they found it hard to agree on substantial cuts in external protection. Other countries, such as Japan, were also reluctant to reduce agricultural protectionism.

Countries were asked to submit, by the end of 1987, their ideas and proposals for conducting the negotiations and implementing the aims of the Punta del Este Declaration¹⁸. Major differences existed between the EC and the USA regarding the negotiations. The US administration had initially demanded a resolute commitment by all parties to a complete dismantling of all subsidies to agriculture by the year 2000 (the "zero-option"). The EC considered this commitment to be unfeasible and

indicated its preference for a more short-term approach, but it did not come up with anything more realistic for support reduction¹⁹.

By the mid-term ministerial meeting held in Montreal in December 1988, the US and EC delegates had reached an impasse on agriculture and a compromise was not reached until April 1989 in Geneva when the US agreed to forsake the zero option and make their objective one of 'progressive reductions' of support. All direct and indirect price support measures were to be halted until the end of 1990, the final deadline for completion of the round. Yet the GATT talks collapsed with hostility in Brussels in December 1990 with the EC's refusal to offer new concessions to the USA and the Cairns Group allies. Guaranteed high domestic prices, import quotas and export subsidies allowed the EC to dispose of surplus products on world markets (*The Guardian*, 5/12/90, p. 13). The GATT talks thus called for substantial reductions in these farm supports that the EC used to protect its farmers from competition abroad. The US demanded that these reductions be met by the EC cutting most subsidies by 75% and cutting export subsidies by 90% over the next 10 years (*ibid.*). The EC, under severe pressure from its farming lobby, was only prepared to offer about 30% (*The Guardian*, 8/12/90, p. 8). The Cairns Group argued there was no point in negotiating if export subsidies were not tackled separately. It had been hoped that after four years of talks a comprehensive package could be reached as progress had been made in the other 14 areas under discussion. Instead a new deadlock emerged and talks were suspended indefinitely. The collapse of the talks emphasised the importance of agriculture to a global accord (*The Guardian*, 7/12/90, p. 20).

In December 1990 it was leaked that the Common Agricultural Policy was to be reformed (*The Guardian*, 12/12/90, p. 1). In February 1991 the Commission formally announced that the CAP was to undergo the most radical reform since its creation in 1962. Commissioner for Agriculture, Ray MacSharry proposed reform of the price support system, switching from production subsidies to direct income support for farmers. It was hoped that the 'new' CAP would result in a fall in the production of surplus food and as a consequence less EC surplus food would be dumped on world markets through use of export subsidies, which were the cause of the deadlock in the GATT negotiations.

The Commission's timing confused many. If these reforms had been produced earlier then perhaps the GATT talks would not have ended in such hostility. A senior commission official explained (quoted in *The Guardian*, 12/12/90, p. 1):

The truth is that work on this report only got under way earlier this year but it is ready now and I hope [it] will make a major impact in the Community and in the outside world.

EC commissioners denied that reform of the CAP was due to international pressure following the collapse of the GATT talks in December 1990. Nevertheless, it was possible that these reforms could be the key to an agreement between the EC and the US in the GATT negotiations. MacSharry reported:

This strengthens our position at GATT. We can say with our heads held high and our chests out that we have done our part, and if you Americans match what we have done there will be no more problems in international trade (*The Guardian*, 22/5/92, p. 1)

The negotiations resumed in the spring of 1991, but made little progress over the months that followed as the two major protagonists in the farm trade argument, the EC and the US, continued their dispute over subsidised exports. In December 1991 EC trade ministers rejected the recommendation put forward at the Heysel conference by GATT Secretary General Arthur Dunkel in his 'Draft Final Act'²⁰. On cereals, over which the US and the UK clashed the most, the Dunkel Plan proposed a 36% reduction in budgetary expenditure on export subsidies, a 24% reduction in the volume of subsidised exports and a 20% reduction in domestic support - all to be phased over the period 1993-1999 (*The Guardian*, 24/12/91, p. 11; *Agra Europe*, 3/1/92, p. P/1). Although parts of Dunkel's draft were acceptable to the Commission - it was prepared to sanction a 36% cut in export subsidies, believing that this would ultimately lead to a 24% reduction in subsidised export volumes - Dutch Trade Minister Yvonne Van Rooy argued that some portions would have to be negotiated further (*The Guardian*, 24/12/91, p. 11). The Dunkel paper required more than that contained in the EC's proposed CAP reforms. Van Rooy argued that "A text that does not take into account the principles of the reforms of the CAP is unacceptable" (quoted in *Agra Europe*, 3/12/92, p. E/3).

The GATT negotiations thus continued, its failures becoming a source of embarrassment to most concerned. Despite the May 1992 agreement on CAP reform GATT talks remained hostile. In July, at the World Economic Summit in Munich, the G7 nations again pledged to aim for a successful conclusion to the round by the end of the year; without an agreement a trade war was imminent. It was 20 November 1992 before the EC and the USA finally came to an agreement on agriculture based on the Dunkel text (*The Guardian*, 21/11/92, p. 1), a critical breakthrough in the six-year-long GATT talks on agriculture. The so-called Blair House agreement²¹

meant a trade war was avoided, it increased the likelihood of a multilateral GATT Treaty being concluded at some point in 1993, and the EC would no longer have to face attacks on its CAP by the US.

The US-EC accord dominated world headlines as 1992 came to an end. However, as Swinbank (1993) and Bailey (1994) point out, it must not be forgotten that the GATT negotiations were not about a bilateral agreement between the USA and the EC on agriculture, but rather a *single* multilateral agreement covering all traded goods and services (15 in all) (Wood, 1994). GATT operates by consensus and so this agreement had to be acceptable to all 108 GATT signatories. It was feared that the agreement might not be acceptable to all countries²² and indeed the 1992 'non-negotiable' Blair House agreement with America to cut Europe's subsidised farm exports had to be 'clarified' in December 1993²³. Therefore, the Uruguay Round of the GATT negotiations, one of the most comprehensive trade deals in history, was finally concluded in Geneva on 15 December 1993 (*The Guardian*, 16/12/93, p. 17). The agreement would come into force on 1 July 1995 until 30 June 2001 after being formally signed at a meeting in Marrakesh in Morocco on April 15. The EC and the US had agreed to disagree thus removing the main obstacles to the package. This, the biggest trade deal in history, was estimated by the World Bank and the Organisation for Economic Co-operation and Development (OECD) to increase global output by between \$213 billion and \$274 billion a year over 10 years (*The Economist*, 4/12/93, p. 19-20; Cable, 1994).

The 550-page document, which contained 40 separate agreements²⁴, included the following key elements for agriculture (Bailey, 1994):

Export Subsidies - the total volume of subsidised exports is to be reduced by 21% over six years (taking the average of the period 1986-90 as the base). Similarly, the budgetary expenditure on export subsidies is to be reduced by 36% over the same time period (same base).

Market Access - all non-tariff barriers, including quotas, are to be converted to tariffs and are to be cut by 36% over six years (base period 1986-90). Countries are required to provide market access to imports previously barred equal to 3% of domestic consumption rising to 5% by the end of the six-year period.

Domestic Support - government paid income support payments for farmers are to be reduced by 20% over six years (base 1986-90). This does not include the direct aids introduced as part of the CAP Reform (e.g. Arable Aid Scheme, Quota Premia payments).

Import Safeguards - any country can impose restrictions on imported products in order to protect their markets being pillaged by surging imports of mass volume or low price.

"Peace Clause" - an important factor which prevents the settlement being challenged for 9 years. The basic principles of the CAP cannot be challenged over this period; any disputes will be settled through consultation procedures.

2.5.2 The EU-International Relationship

Because the Uruguay Round GATT negotiations and EC reform processes occurred simultaneously in the early 1990s, this EU-international relationship in EC policy-making has resulted in much debate and has led many to ask: were the MacSharry reforms driven by internal or external factors? When, in 1991, the European Commission formally announced that the CAP was to be reformed, EC agricultural policymakers insisted that these were *internal* reforms independent of the GATT negotiations. Despite this, others argue that reform was hastened by the Community's international commitment under the GATT.

Indeed, Coleman and Tangermann (1999) point out that there are two schools of thought on the relationship between CAP reform and the Uruguay Round GATT negotiations. The first argues that CAP reform was not related to international negotiations but rather occurred as a result of internal domestic problems associated with high budgetary costs and surplus products. For example, Moyer and Josling had concluded in 1990 that "international political pressures do not play a major role in domestic agricultural policy reform" (1990, p. 211). Some years later, Paarlberg (1997, p. 416) explores what factors forced reform and concludes from his evidence that "... the Uruguay Round contributed little to the 1991-92 MacSharry Reforms". Although he does recognise that "external political pressures did help speed some internal reform" (1997, p. 416), he still argues that the Uruguay Round was not the main factor in the external political process, but rather that the US defence of Dillon Round concessions played a bigger part. Whilst not denying that the Uruguay Round did help elicit the CAP reforms, Paarlberg concludes that the Uruguay Round "added only marginally to reform in the EU" (1997, p. 439). Rieger's (1997) argument follows a similar vein:

... it was *neither* the state of international agricultural markets *nor* the pressure applied by the USA that convinced the European policy-makers to take the inclusion of agriculture in the Uruguay Round more seriously (p. 112; emphasis in original).

Rather, Rieger (1997) maintains that rising budget costs and the farm income problem were the main reasons for reform.

The second school of thought, whilst not denying the importance of domestic problems, suggests that the reforms occurred because of international pressures resulting from the GATT negotiations. Coleman and Tangermann (1999) ardently favour this second hypothesis, arguing that “it explains the historical events much better than the rival hypothesis that the nature of CAP reforms reflects primarily internal EU Member State preferences” (p. 386). Patterson (1997) recognises that international negotiations played but a small part in the 1988 stabilisers reform package but argues that in comparison a strong link had occurred between the Uruguay Round and the 1992 reform. That reform was a result of Uruguay Round pressures is a hypothesis that many other analysts agree with including, for example, Rayner *et al.* (1999), Epstein (1997), Keeler (1996), Mahé and Roe (1996) and Grant (1995a).

An analysis of the relationship between international and EU policy-making must examine how policy-making at the international level constrains policy-makers at the EU and Member State level in terms of their choice of objectives and instruments (Coleman and Tangermann, 1999). Putnam’s (1988) model first described the national-international relationship as a two-level game framework. At the national level, local interest groups coerce the government to adopt favourable policies while policy-makers seek to retain power by creating unity among such groups. At the international level of the game, national governments work hard to satisfy domestic interests while attempting to reduce the conflicting effects of international developments. Putnam’s model has since been adjusted by other analysts to explain the EU-international relationship (Coleman and Tangermann, 1999; Patterson, 1997; Paarlberg, 1997; Keeler, 1996; Tsebelis, 1990). Some analysts (for example, Moyer, 1993; Keeler, 1996; and, Patterson, 1997) believe that Putnam’s two-level model only goes so far, and therefore suggest that an additional level of play be added – that is, the Community level, where “member states attempt to achieve domestic goals while simultaneously pursuing co-operative integration” (Patterson, 1997, p. 141). The model thus becomes a three-level game where the interaction of negotiations occurring at the domestic, Community and international levels affect policy options at each of the other levels. Patterson (1997) uses her three-level game to analyse how the different levels interacted with each other and in doing so highlights the pressures and options for agriculture policy reform in 1992. “International negotiations” (i.e. at the

GATT level) are referred to as *Level I* negotiations. At this level, three developments had occurred to increase the pressure for CAP reform. Firstly, it was obvious that the 1988 stabiliser package had not been successful in easing the burden on the EC budget or on world trade relations. Secondly, it was obvious that unless the dispute in the agriculture negotiations was resolved, the Uruguay Round would break down completely thus affecting not just agriculture but other sectors such as trade and industry and service interests. Thirdly, there was pressure from the Bush administration to complete the round of negotiations before the November elections in the US as it was unclear what a change in government might mean for the Uruguay Round.

“Community negotiations” (i.e. at the EC level) are referred to as *Level II* negotiations. At this level, two developments were pushing the need for reform. Firstly, as mentioned above, the Community was facing increasing budgetary problems. Secondly, initiatives were put forward for economic and monetary union and for new environmental standards (policy regulations developed as part of the Single European Act (SEA)). Both initiatives would lead to decreased production and farm incomes, which would inevitably intensify the need for reform. When the reform proposals were published in 1991 “newspaper stories [claimed] that these were *budget driven, internal* reforms unconnected with the GATT negotiations” (Swinbank, 1993, p. 360, emphasis in original). The Commission itself insisted that the proposals were not related to the Uruguay Round negotiations (Patterson, 1997, p. 155). However, Patterson (1997) notes that by May 1992 when the actual reforms were published, the Commission *had* linked the two reform processes.

“Domestic negotiations” (i.e. within member states) are referred to as *Level III* negotiations. Patterson argues that in the 1992 reforms “domestic politics influenced the contours of member states win sets at the Community level” (1997, p. 156). Keeler (1996, p. 128) argues that this level “represents the most important (and most often neglected) piece of a complex puzzle”. Therefore the negotiations that took place in Germany and France are particularly significant. In Germany, farmers, consumers, industry and the regional (Länder) Ministers of Agriculture strongly criticised the 1992 reforms and so von Cramon-Taubadel (1993, p. 394) sees Germany’s acceptance of the reforms as “something of a paradox” and “puzzling”. However, this major change in Germany’s agricultural policy environment is explained by:

German Reunification and the importance of agriculture in the current Uruguay Round of GATT negotiations [which] ... have made it much more

difficult and costly for Germany to indulge in a highly protectionistic sectoral policy for agriculture (von Cramon-Taubadel, 1993, p. 394).

Reunification of East and West Germany changed the nature and structure of agriculture and the economic situation in Germany. German policy-makers were now forced to bear in mind the interests of a heterogeneous coalition of interest groups. Reunification and its resulting changes also made the country greatly dependent on a stable world trading order. A successful conclusion to the Uruguay Round was crucial to Germany's economy (Ockenden and Franklin, 1995). Furthermore, pressure was exerted by Germany's trading partners to include agriculture in the Uruguay Round conclusions. All in all, Germany was unable to resist agricultural policy change.

So what forced the hand of the French agricultural policy-makers? Patterson (1997) believes that two factors stand out²⁵. First, the French government realised that without reform the budgetary problems of the CAP and the problems related to rising production were destined to continue. Secondly, French agriculture would suffer if a quota system was introduced to decrease expenditure as it would lose both internal and external market share.

In light of the above, Patterson's (1997) analysis therefore concludes with three points:

the power and diversity of interest groups affect outcome ..., the higher the cost of no agreement the more likely it is that a substantive reform will be passed ..., [and] the degree of autonomy enjoyed by policymakers and the strategies they employed played key roles in achieving acceptable and meaningful policy reform (pp. 161-2).

In their examination of the linkages between domestic, regional (EU) and international levels of policy-making, Coleman and Tangermann (1999, p. 387) argue that the EU/GATT negotiations ought to be treated as autonomous, linked games (the GATT game and the CAP game). The outcomes in one game changed the payoffs and consequently the strategies in the other game. They use this theoretical framework to show that the MacSharry reform was a "direct response" to the ongoing Uruguay Round GATT negotiations. In reforming the CAP, EU policy-makers had to choose policy instruments and shape them accordingly in order to solve internal problems. However, these same policy instruments were also required to solve the EU's 'international' problems and allow the GATT negotiations to proceed. The policy instruments that were eventually chosen (lower intervention prices, direct subsidy payments to farmers, and compulsory set-aside) were sufficient to permit the conclusion of the Uruguay Round but were still not as radical as that originally

demanded by the US and Cairns Group. Grant (1995a, p. 10) sums up the situation suitably:

The whole approach of the European Commission to the GATT agreement often gives the impression that it is postponing tackling problems until they actually arrive, thus avoiding the danger of offending a member state in the mean time.

So as well as postponing CAP reform till the last minute, it is argued that the Commission also managed to resist radical change, a theme which is discussed more in Section 2.8 below.

The chapter now proceeds to an examination of the MacSharry reform proposals which were published in 1991, preceding the examination of what was actually approved by the Council of Ministers in May 1992 (Section 2.7).

2.6 The MacSharry Reform Proposals

As was shown in Section 2.2, past reforms had clearly failed and so the reform debate continued into the 1990s, further exacerbated by the GATT problems as shown above. In February 1991 the Commission published a communication on the development and future of the CAP (CEC, 1991a). This *Reflections* paper highlighted the many problems facing the CAP, particularly in relation to market stability, farm incomes, the agricultural budget and the effect of agriculture on the environment. It was concluded that fundamental reform was essential. In July, in a follow-up to the Reflections Paper, the Commission presented to the Council of Ministers and the European Parliament specific proposals to reform the CAP (CEC, 1991b), taking into account concerns about the Reflections paper expressed by interested parties i.e. all Member States, many professional organisations and private individuals.

The reform proposals were initiated and moved by Irishman Ray MacSharry, then Commissioner for Agriculture, who was genuinely appalled by the inefficiency of the CAP (Dinan, 1994). In the foreword to this paper, MacSharry painted a grim picture of the problems caused by an overly 'successful' Common Agricultural Policy:

We have 20 million tonnes of cereals in intervention and that is predicted to rise to 30 million tonnes. We have almost one million tonnes of dairy products in stock. We have, too, 750,000 tonnes of beef in intervention which is rising at the rate of 15,000 to 20,000 tonnes a week. As no markets can be found for these products, they are being stored at taxpayers' expense. And we have run short of storage space (CEC, 1991b).

It was vital to reform the mechanisms of the CAP without changing its three basic principles, namely, market unity, Community preference and financial solidarity. The Commission thus proposed the introduction of a competitive price policy to ensure that the Community could meet competition on both its domestic market and also on world markets. Such a policy would encourage farmers, through changed input/output price relationships, to use more extensive farming methods, thus protecting the environment and reducing surplus production. Farmers would be compensated for income loss due to reductions in prices and quotas - a system that the Commission believed would provide farmers with a more secure and stable future. The Commission also proposed new agri-environmental and forestry measures together with an improved early retirement scheme to complement the approach to the market organisations, which also showed their concern with rural development. In summary, the aims of the proposed reforms were threefold (CEC, 1992, p. 11-12):

- (i) to provide the Community's farmers with a new and more stable framework within which they could improve their competitiveness and their earnings;
- (ii) to redirect support to farmers in a fairer way which would help control production, stabilize markets and support incomes;
- (iii) to provide increased support for encouragement of less-intensive production techniques and better care of the environment.

To achieve these aims, the MacSharry proposals embraced two main elements: a price cut and direct aid aimed at small, and by implication, poorer producers. MacSharry closed the foreword to the follow up paper in the following way:

This is not an 'a la carte' menu. It is a carefully chosen menu designed to nurture a good, sound European Community Agriculture Policy for the 1990s and into the 21st century. It is an approach which, I believe, will bring substantial benefits to farmers and consumers; in fact to all Community citizens (CEC, 1991b).

The main aspects of the reform lay in the areas of cereals, oilseeds and protein crops, tobacco, milk, beef and sheepmeat which accounted for up to 75% of the value of agricultural production subject to the common market organisations in the principal sectors. Other products, such as olive oil, sugar, fruit and vegetables and wine were barely touched by either the MacSharry proposals or the 1992 reform package²⁶.

The MacSharry proposals were divided into two parts. One examined the market organisations, while the other part, entitled *Accompanying Measures*, examined agri-environmental, forestry and early retirement programmes. These proposed reforms, with the possible exception of the 1968 Mansholt Plan, were the

most fundamental and radical CAP reforms ever put forward by the Commission. These proposals will be now be considered.

2.6.1 Market Organisations

Market organisations covered cereals, oilseeds, protein crops, tobacco, milk, beef and sheepmeat. With the exception of tobacco (which is not relevant to this study), these sectors are examined below.

A. Cereals, Oilseeds and Protein Crops

In the Community in 1990/91, cereals, oilseeds and protein crops (henceforth abbreviated as COPs) were grown on around 4.3 million holdings. As shown in Table 2.1, cereals is undoubtedly the most important of the three crops with 172 million tonnes produced on 36 million hectares in 1990/91. Farmers producing cereals with yields above the Community average (that is, between 4.5 and 5 tonnes per hectare in 1990/91²⁷) also tend to grow oilseeds and protein crops. This enables them to alternate the crops between cereals and oilseeds depending on the profitability of each and on weather conditions.

Table 2.1 Production of crops in the EC in 1990/91

Crop	Area (m hectares)	Production (m tonnes)
Cereals	36.0	172.0
Oilseeds ¹	5.5	11.7 ²
Protein Crops	1.3	5.0

Source: CEC (1991b)

Notes: ¹ Includes oilseed rape, sunflower seed and soyabeans.

² Oilseed rape - 5.9m tonnes; sunflower seed - 3.9m tonnes; soyabeans - 1.9m tonnes.

Table 2.2 Uses of cereals, oilseeds and protein crops

Crop	Uses
Cereals	Animal feed, human consumption, industrial purposes
Oilseeds	Production of cake for animal feed, oil for human, animal and industrial use
Protein Crops	Mainly animal feed

COPs are interdependent in terms of land use and in terms of their use in animal feed (Table 2.2 shows uses for each crop). They are, however, very different in terms of the common market organisations. The cereals regime consists of a price support system, import levies and export refunds and a system of guaranteed prices to make up the difference between prices in the EC and world market prices. The regimes for

oilseeds and protein crops differ from cereals in that they are basically payments made to EC producers to make up for disparities between prices paid to them and world price levels, although the same system of guaranteed prices applies to this regime also. The new regime for these three sectors was proposed by the Commission in order to "bring about a more coherent policy for the major crop sectors" (CEC, 1991b, p. 8). The radical reforms proposed would mean that future guarantees to farmers would cease to be primarily linked with volumes produced. The proposed reforms would include a reduction in institutional prices but a compensatory payment system would be introduced to compensate farmers for loss of income. These compensation payments, based on average past yields in the region concerned, would be paid on a per hectare basis. Participation in the aid scheme was to be voluntary.

(i) Cereals

The vast majority of cereal producers (88% or 3.7 million holdings), accounting for 40% of the total cereals area and for 33% of cereals output (CEC, 1991b, p. 7), had less than 20 hectares under cereals in 1990/91. The use of cereals for animal feed, human consumption and industrial purposes was continuing to decline at an annual rate of around 1.5 million tonnes, while, at the same time, exports were decreasing. This combination resulted in a large increase in cereals intervention stocks (sitting at a record 20 million tonnes in 1991). As Table 2.1 shows, cereals production stood at 172.0 million tonnes in 1990/91. An increase (in both yield and area) was expected in 1991/92 with production levels reaching 180 million tonnes, rising to 187 million tonnes by 1996 due to an estimated surplus for export of 45 million tonnes (15 million tonnes more than in 1990/91). In the short term, temporary set-aside arrangements adopted as part of the 1990/91 price proposals, that is 15% of arable land set-aside compensated by a repayment of the increased co-responsibility levy of 5% plus payment of a set-aside premium, would dampen the disposal problems to an extent. But it would not be the answer in the longer term. The Commission recognised that without reform, cereals production would most likely exceed the guaranteed threshold in most years, resulting in further co-responsibility levy and price cuts annually of 3%. Thus, in light of severe and developing problems of surplus production and increasing use of substitutes, the Commission proposed its reforms for the cereals sector.

Cereals Reform Proposals

It was proposed that cereal prices be cut by 35% over a three-year transitional period (CEC, 1991b, p. 9). This meant that for all cereals (except for rice for which an equivalent system would be introduced) the average buying-in price of 155 ECU/tonne would be replaced by fixing a new target price of 100 ECU/tonne i.e. the anticipated stabilized world market price. The intervention price would be fixed at 10% below this, at 90 ECU/tonne, and the threshold price at 10% above, at 110 ECU/tonne. Once the new market organisation came fully into effect, stabiliser arrangements, including co-responsibility levies and the maximum guaranteed quantity (MGQ), would be withdrawn. These proposed price cuts meant that cereal farmers would face an income loss of 55 ECU/tonne i.e. the difference between the average buying-in price of 155 ECU/tonne and the new target price of 100 ECU/tonne. To compensate for this loss, the Commission would introduce per hectare compensation payments which would be reviewed periodically.

Each Member State would be required to present a regionalisation plan, acceptable to the Commission, for all its regions, using all reliable statistical data available. A historical three-year average yield would be calculated for each region, based on the average of three marketing years from the last five (1986/87 to 1990/91), omitting the lowest and highest figure. Having calculated the regional average yield, the regional per hectare aid could be calculated using the formula: **regional average yield in tonnes/hectare x 55 ECU/tonne**. In addition to this, a special aid of 300 ECU/hectare would be paid to durum wheat producers in the traditional production zones to fully compensate them for loss of income because of adjustment on the decreased price for other cereals. The compensatory aid for both cereals and durum wheat would be paid during the first half of the marketing year.

It was expected that lower cereal prices would benefit producers in other sectors, in particular pigmeat and poultry and egg producers. The effect upon milk and beef producers would vary depending upon amounts of cereals and concentrates they used in animal feed. Consumers would also benefit, as cereals are clearly an essential ingredient in most basic foods. Furthermore, reduced cereal prices would have a knock on effect in the livestock sector, leading to lower prices for meat and milk. This was, of course, taken into account when reforms for the livestock sector were proposed (see below).

The cereals reforms, i.e. the support price cuts and the introduction of the compensation payment system, would be phased in in three stages over a three year

period beginning from the first marketing year of implementation of the reform (CEC, 1991b, pp. 13-14).

(ii) Oilseeds

In 1990/91, half a million farmers were producing 11.7 million tonnes of oilseeds on nearly 5.5 million hectares. Production was expected to rise to 13 million tonnes in 1991/92 (CEC, 1991b, p. 7). Oilseed production normally exceeds the guaranteed thresholds, which can give rise to acute price reductions, for example, in 1990/91 the price of rape, sunflower and soya fell by 15.5%, 21% and 30% respectively. As a result of the GATT 'Oilseeds Panel' conclusions, the Community committed itself to reform in the area of oilseeds.

Oilseeds Reform Proposals

Support for oilseeds (and similarly for protein crops) would be presented in the form of a standardised compensatory payment system with per hectare support paid directly to producers, with the traditional system of institutional prices no longer applying. MGQs and their related stabilizer mechanisms, based on traditional institutional prices, would therefore cease to exist when the new common market organisation was fully implemented.

The first stage in calculating compensatory aid for oilseed producers would involve establishing a Community reference amount which would take two elements into consideration: a reference price for the world market, estimated at 163 ECU/tonne; and, 'an estimated equilibrium price relationship between oilseeds and cereals' (CEC, 1991b, p. 11), which would help prevent the opting for one crop over the other. The second stage would entail regionalising the Community reference amount for each region presented in the Member States' regionalisation plans (see 'Cereals' section above). The aid (calculations for oilseeds and its regionalisation is given in CEC, 1991b, p. 39), to be the same for all oilseeds, would be paid in two stages. The first instalment would be a basic amount prepaid on the basis of area cultivated, providing that the crop was contracted to an approved buyer. The second instalment would take the form of a variable supplement paid at the marketing year-end, taking into consideration (with a franchise to be determined) any increase in world market prices in comparison to the reference price. The total aid (both instalments combined) would be paid at the end of the marketing year in cases where crops were not under contract. If these new arrangements, when put into effect, were

to result in severe regional inequalities, the Commission would adopt measures necessary to resolve the situation.

Reform for oilseeds would take place in one step in the first marketing year of implementation of the reform. However, due to commitments made by the Community regarding the oilseeds panel, a transitional scheme, containing some parts of the oilseeds reform, was to be proposed before 31 July 1991. The transitional scheme would span from the 1991 sowings (for the 1992/93 marketing year) to the date when the reform would be implemented. In essence, the scheme would be based on compensatory payments paid direct to producers. Steps would be taken to control production levels. These new arrangements for oilseeds would comply with the conclusions of the 'oilseeds panel' while also presenting greater understanding and clarity.

(iii) Protein crops

Protein crops did not hold the same difficulties as the cereals and oilseeds sectors. In 1990/91 with 1.3 million hectares under protein crops, production stood at 5 million tonnes (exceeding the guaranteed threshold by 1.5 million tonnes).

Protein Crops Reform Proposals

Compensatory aid for protein crops would be provided in the same manner as oilseeds, with payments initially set at the same level as the cereals aid and with equivalent regionalisation proposals. The aid, the same for all protein crops, with the exception of dried fodder where the aid was to be withdrawn, would be paid in two stages under the same conditions as determined for oilseeds. As with oilseeds, the proposed reforms for protein crops would be take place in one step in the first marketing year of implementation of the reform.

(iv) Compensation for COPs Producers

Compensation for producers of COPs was to be 'modulated'. Small farmers would receive full compensation, but the larger professional farmers would only receive partial compensation. The Commission proposed a *Simplified Aid Scheme for Small Producers* in order to "facilitate administration and control" (CEC, 1991b, p. 12) and also an *Aid Scheme for 'Professional' Producers'* who would not qualify as small producers. A 'small producer' was defined as one not producing more than 92 tonnes of cereals per annum, approximately equivalent to a 20 hectare holding. The aid

regionalisation plans (see above), which would define the average cereal yield per region/sub-region, would be used to establish which producers would be eligible. The specified limit per region would apply to the combined area under COPs. The small producers scheme would mean that regionalised cereals aid would be paid per hectare for the area under COPs, regardless of the combination of crops sown. Furthermore, and importantly, under this scheme small producers were exempt from set-aside requirements.

Larger farmers (producing over 92 tonnes of cereals) would be considered as 'professional producers', although a small producer could opt for the professional scheme should it be more advantageous for him to do so. Those taking part in the professional aid scheme were required to set-aside (in rotation for environmental reasons) 15% of their COPs area. This 15% requirement would be adjusted annually in light of developments in production and the market situation. Land set-aside as temporary fallow could be used for non-food purposes (e.g. biofuel). These new arrangements would supersede the voluntary 5-year set-aside scheme in existence at the time. For producers with commitments under the former scheme, transitional arrangements would be made to ensure that they would not be financially disadvantaged to those participating in the new scheme.

Those participating in the professional scheme would receive limited compensation for land set-aside and for keeping such land in an environmentally sound condition. Compensation would apply to the 15% set-aside obligation, equivalent to an area producing up to 230 tonnes of cereals (approximately 50 hectares). Those participating in the scheme with 50 or more hectares would therefore receive compensation for 7.5 of the hectares set-aside. Those with less than 50 hectares, but not qualifying as a small producer, would be compensated on a proportionate basis. The upper area limit for compensation for set-aside (applicable to the total area under the three crops) would be determined for the regions by using the corresponding yield averages for cereals in the regionalisation plans.

In a general overview of the proposed COPs reforms the Commission stated that: "The new mechanisms proposed should be effective in bringing about a significant reduction in production leading to better market balance" (CEC, 1991b, p. 14). This would mean the end of the existing stabiliser mechanisms. The cut in institutional prices would lead to important changes in the relationship between input prices (fertilizers and pesticides) and product prices. It was expected that over time these changes would improve the environment through extensive farming practices

and also lead to lower production. Meantime, production was expected to fall in the short term as a result of set-aside.

B. Dairy

In 1991 milk accounted for 17% of total farm production with 24.5 million milk cows in the EC producing some 115 million tonnes of milk with milk yields per cow increasing by 1.5% a year (CEC, 1991b). At the same time, demand for butter was decreasing while it was anticipated that demand for milk and milk products (including consumption due to special subsidised disposal measures) would stabilize globally at just under 99 million tonnes, leaving an internal surplus of over 15 million tonnes. Without the special internal disposal measures, which cost over 2 billion ECU in 1991, milk surplus would have amounted to 25 million tonnes. Overall, the Community's stocks of butter and milk powder stood at 900,000 tonnes in 1991 with forecasts of both internal and external demand - due largely to the break up of the USSR - looking extremely unfavourable.

Dairy Reform Proposals

With regard to milk, reform proposals were aimed firstly at the quota system and secondly at prices and premia.

(i) The Quota System

Changes to the quota system would occur with an extension of the quota regime which was due to expire in 1992. Bearing in mind the situation in the milk market, it was clear to the Commission that the quota reduction of 2% agreed in the 1991/92 price package was not enough to prevent a further increase in intervention stocks. It was therefore proposed that the existing 2% milk quota be further reduced by 3%. This cut would be achieved by cutting individual reference quantities by 4%. Small and medium sized producers (producing less than 200,000 kg per annum and accounting for up to 90% of total dairy producers) would be protected from quota cuts as Member States would be required to establish a voluntary cessation scheme extended to all producers with the aim of generating a milk pool. This aimed to encourage greater economic and social cohesion. This voluntary scheme would be co-financed by the Community, up to 17 ECU per 100 kg per annum for each of the three years. Guaranteed bonds would be used to administer the premium system. Compensatory 'payments' would therefore consist of a bond with a lifetime of 10 years, issued to the

farmers concerned on the basis of which annual payments would be made by the Community over the 10-year period. Farmers would have the option of keeping the bond, thereby receiving the annual payments, or selling it privately. This payment method of guaranteed bonds for the cessation scheme together with the rate of aid would afford milk producers the opportunity to voluntarily leave the industry if they so wished.

Of the 4% cut in individual quotas, Member States would re-distribute 1% to special categories such as extensive dairy holdings in mountain areas and other less favoured areas, young farmers, those partaking in agri-environmental programmes, and so on (CEC, 1991b, p. 21). Producers having to accept a cut in quotas would receive annual compensation payments of 5 ECU/100 kg over a 10-year period. Member States could add a national supplement to this amount.

Once these new quota arrangements were in place, there would be nothing to stop Member States from continuing to participate in the buy-up/redistribution scheme on a voluntary basis. This would enable farmers to sell quotas to public authorities in return for bonds (guaranteed by both the Community and the Member State). The continuous build-up of quota reserves could therefore take place, which could be used to re-distribute milk to priority farmers or otherwise dealt with according to market requirements. The Community would meet half the costs of the programme and up to a maximum annual amount of premium of 2.5 ECU per 100 kg over a 10-year period.

(ii) Prices and Premia

The Commission proposed a 10% price cut for milk, 15% for butter (a larger cut due to disposal problems) and 5% for skimmed milk powder. These cuts would coincide with feed cost savings arising from the cereals price cut. As these savings would mainly benefit intensive milk production, an annual dairy cow premium would be introduced to prevent the producers concerned being put at a disadvantage and to also encourage extensive dairy farming. The premium of 75 ECU would be paid for the first 40 cows in every herd on condition of compliance with strict stocking limits (see CEC, 1991b, p. 22). Small producers (delivering less than 24,000 litres per annum) would not be subject to these limits. The milk co-responsibility levy (payment of which amounted to 1.5% of the target price for over 60,000 litres and 1% of the target price up to 60 000 litres outside LFAs in 1991) would be withdrawn. The Commission also proposed the establishment of a Community programme to promote dairy

products, to be co-financed by producers, market operators and the Community. Part of the financing would be provided by a levy on sales to intervention.

Changes to both the quota system and institutional prices were to be phased in in three stages (see CEC, 1991b, p. 23), with the exception of the withdrawal of the milk co-responsibility levy which would occur with immediate effect. The 'gradual approach' was suggested for the milk quota system because it was necessary to take into account the consequences of the reductions for the beef sector, i.e. increased slaughtering.

C. Beef

In 1991 cattle (83.2 million beef and dairy animals) rearing accounted for approximately a third of total farm production in the Community (beef/veal: 15%, milk: 17%) with many farms involved in both beef and milk production (CEC, 1991b, p. 25). Between 80-90% of farms had less than 20 beef cattle, accounting for 45% of beef production.

Between 1989-91 beef production was on the increase with output at around 8 million tonnes. Reasons for this increase include, for example, switching from dairy to beef production, a slaughterweights rise due to the switch from veal to beef, and a rise in the import of calves, particularly from Eastern Europe. Furthermore, the 1991/92 milk quota reductions were expected to further increase slaughterings. However, while output continued to increase, internal and external demand decreased, due mainly to varying consumer patterns (largely as a result of BSE scares²⁸) and problems in markets of third countries, including the effects of the Gulf War and German Unification. Thus at the time of the proposed reforms, intervention stocks stood at 750,000 tonnes, with budgetary costs on the increase at over 4 billion ECU per annum.

Beef Reform Proposals

The aim of the beef reform proposals was to reduce beef production and encourage beef consumption. It was thus proposed to cut beef prices by 15% over three years: 10% to reflect the reduction in feed costs and 5% to preserve the competitive position of beef. This price reduction was to be compensated in two ways. The extensive beef producers raising cattle on open grazing land, who would not profit from price reductions in cereals, would have existing beef premiums increased to ECU 180 per head for the first 90 male bovines per herd. This would be payable in three annual instalments over the lifetime of an animal (CEC, 1991b, p. 25). The annual suckler

cow premium for extensive producers would also be increased (to 75 ECU per cow), again limited to the first 90-head, payable only for beef or dual-purpose (beef/milk) breeds. Payment of all these premiums was conditional on stated stocking rate requirements per hectare (CEC, 1991b, p. 26).

To avoid further surplus production, the Commission proposed the introduction of a processing/marketing premium, fixed initially at 100 ECU per head, for young (8/10 days) male dairy-breed calves withdrawn from production (i.e. slaughtered). As with dairy products, the Commission proposed a Community programme to promote beef, again co-financed by producers, the industry and the Community and partly financed by a levy on sales to intervention. A further programme would be set up to reassure consumers concerned about the presence of banned substances such as hormones in beef. Most of these reforms - price reductions, the special premium for male bovines, and the suckler cow premium - were to be phased in in three stages over three years. The stocking rate requirements would apply from the beginning of the implementation of the reforms.

D. Sheepmeat

In 1991 there were 1 million farms raising over 100 million sheep in the Community, 70% of which were in less favoured or mountainous areas. Of these farms, 500,000 of them had less than 50 ewes (CEC, 1991b, p. 28). Although flock size in the Community was stable, production was increasing. Consumption of sheepmeat was also rising but at a lower rate. In this sector, farmers were paid a ewe premium to compensate for fluctuations in market prices. With production increasing and market prices remaining low, spending in this sector had risen to 2.3 billion ECU in 1991.

Sheepmeat Reform Proposals

A double ceiling to the ewe premium was proposed in order to reduce production in a fair way for all producers. Firstly, a ewe premium quota based on the producer's reference flock, which would be the number of eligible ewes in the 1990 marketing year, would be introduced. Secondly, the number of premiums per producer was to be reduced from 1,000 to 750 ewes in the less favoured areas (LFAs), and from 500 to 350 elsewhere. No premium would be paid for ewes above these limits. These new limits would be phased in three stages over a three-year period (CEC, 1991b, p. 28). It was expected that these measures might increase slaughterings in the short term as producers reduced numbers from 1991 levels, but that as the market recovered,

production and expenditure would stabilise thereafter. To simplify administration of the new scheme, no specific criteria for 'eligible' ewes would be applied. There would be no changes to the supplement (5.5 ECU per ewe in 1991) to the ewe premium in LFAs.

2.6.2 Accompanying Measures

In addition to the reform proposals on cereals and livestock, the CAP reform proposals were complemented by a number of 'accompanying measures' (CEC, 1991b, pp. 32-37). The Commission were eager to resolve some of the long term problems facing rural areas and argued that an effective rural development policy was required to ensure a flourishing agricultural sector and to encourage new economic activities on and off the farm in rural areas. It must be noted that over 50% of the land area of the Community is taken up by farming (this figure reaches 80% if forests are taken into account). MacSharry therefore proposed "three key measures complementary to the changes proposed in the market organisations and which offer special opportunities for rural development" (CEC, 1991b, p. 32). These measures fell under the following broad headings:

- (i) agri-environmental programme;
- (ii) afforestation of agricultural land;
- (iii) structural improvement through early retirement.

The implementation of these measures would take place in the form of multiannual programmes negotiated at national, and where appropriate, regional level. The costs incurred by these proposals would be financed within the framework of the Guarantee section of the EAGGF, parallel with the market regimes.

(i) Agri-environmental action programme

This programme aimed to encourage less intensive farming practices in the interests of the environment. Farmers were seen as having a dual role: "as producers and as stewards of the natural environment and landscape of the countryside" (CEC, 1992, p. 14). The Commission would provide a system of aids to encourage farmers to participate in this programme. The aims of the agri-environmental action programme firstly included the use of environmentally friendly production techniques which would involve reducing levels of pollutants (fertilizers, pesticides, herbicides) in crop production; and the reduction of livestock where excessive stocking of sheep and

cattle was causing damage. Farmers who undertook such measures would be compensated for any associated losses. The second aim of this programme involved managing farmland in ways that would conserve the range and quality of the natural environment (scenery, flora and fauna). Aids would be available to farmers who refrained from environmentally harmful activities such as drainage and irrigation; who replaced natural features whose removal has been damaging to the environment, for example, for wildlife; and who farmed extensively on land of low value in agricultural terms. Finally, aid would be available for the upkeep of agricultural land abandoned by farmers and nonfarmers in rural areas. This would take the form of annual payments of a flat-rate per hectare. To complete the programme the introduction of set-aside on a long term basis (20 years) for environmental reasons would be encouraged. Such set-aside land could be used, for example, to create conservation reserves or small natural parks. A set-aside premium additional to that already in existence would be available for those involved in the environmental upkeep of such land.

(ii) Afforestation of agricultural land

Recognising the importance of forestry for land use and the environment in the Community, MacSharry proposed the second of the accompanying measures, the 'Afforestation of Agricultural Land'. It was appreciated that existing support for investment was not adequate and that compensatory amounts for income loss whilst awaiting the maturity of forests were too low and so the Commission proposed "an improvement of existing incentives with the intention of promoting afforestation on a sound ecological basis and improving the rural environment" (CEC, 1991, p. 35-6). The new measures would simultaneously provide farmers with diversified income and also reduce the Community's wood deficit over time.

A new subsidy scheme to promote afforestation as an alternative use of agricultural land, with the level of aid provided varying for conifers and broad-leaved trees (CEC, 1991, p. 35), was thus proposed. For this scheme the Commission put forward five proposals. First, they recommended an increase per hectare in the maximum grant for the purpose of EAGGF reimbursement of afforestation costs. Secondly, in addition to private individuals and associations, public authorities would also qualify for afforestation aid. Thirdly, an annual premia per hectare over five years would be made available for the management of new plantations on farms. Fourthly, the annual forestry premia per hectare which compensated farmers for loss of income

pending maturity of the trees, would be increased to the equivalent of the set-aside premium for comparable land in the same region, payable over a maximum of 20 years. Finally, the Commission proposed that non-farmers living in rural areas who afforest agricultural land should be compensated with an annual premium per hectare payable over a 20-year period for part of the forestry costs incurred to them.

(iii) Structural improvement through early retirement

It was calculated that of the 4.6 million farmers in the Community over 55 years of age (two million of which were over 65), half of them had no successors. Two in three had less than 5 hectares (CEC, 1991b, p. 36). For many small farms, existence was not practical in economic terms. The Commission therefore put forward proposals for revising existing arrangements for early retirement. This proposed scheme, which was to be compulsory for the Member States, would benefit all full-time farmers aged 55 years or more and not receiving a pension. Those eligible could retire from farming if they ensured that their successors or other farmers would farm the land to enhance its economic and structural viability, or if the land was used for non-agricultural purposes where restructuring was not possible. If opting for the early retirement premiums was to result in abandonment of the land by some farmers then local authorities would be urged to keep the land in an 'ecologically sound condition'. Aid would be granted under the proposed agri-environmental programme and under the afforestation programme if required. The maximum total eligible amount for early retirement was to be 10,000 ECU per annum. The Commission would ensure that those receiving Community financed early retirement pensions would not have national social security payments withdrawn or reduced, if eligible for such payments. Agricultural workers would also be eligible for early retirement pensions.

2.7 The MacSharry Reform Package

Reactions to the proposals were uniform with agriculture ministers and farming organisations united in their opposition to the reform package. John Gummer, UK Agriculture Minister argued that the proposals "Would turn farms into museums and make farmers curators of an increasingly out-dated structure" (de Salis, 1991, p. 26). MacSharry was also unpopular in his home country where he was accused of attempting to destroy the CAP (*Irish Times*, 10/7/91, p. 1). Furthermore, the

MacSharry Plan faced problems in the Commission, which had the task of approving the Plan and forwarding it to the Council. Jacques Delors, Commission President, was afraid of opposing French political opinion and was thus unwilling to back MacSharry. Others, such as Frans Andriassen, External Relations Commissioner, was also unwilling to rock the boat, despite the importance of the CAP reform on the Uruguay Round. However, the Plan was finally approved and forwarded to the Council in July 1991²⁹.

But the situation proved no better in the Council of Ministers. British, Dutch and Danish ministers opposed the Plan on the grounds that it favoured smaller producers. The concept of modulation was strongly opposed by the larger Community farmers, especially in the UK and France where the largest cereal farmers are to be found. They believed this concept was biased in favour of small producers and discriminated against the large, most efficient producers. The UK Agriculture Minister insisted that everyone should benefit. Those opposed were also against the fact that eligibility for compensation payments was to be linked to a set-aside scheme, arguing that this proposal again favoured the small farmers because larger farmers (producing over 92 tonnes of cereals) had to set-aside (in rotation) 15% of their COPs area. Spain, Greece, Portugal and Ireland argued that adequate compensation was not being made available to smaller farmers. The French, unsurprisingly, were opposed to reform of any kind. The German's, on the other hand, surprised many by backing the Plan (von Cramon-Taubadel, 1993). It was in their interests to do so as the G7 economic summit was due to meet in Munich in July 1992 and it was desirable to reach a GATT agreement before this date. Furthermore, the German government was concerned about the impact of German unification on farm policy.

The Agriculture Council, after prolonged discussion, finally reached agreement on May 21, 1992 under the Portuguese presidency, through qualified majority vote. The Council's decisions considerably amended the original proposals, in particular those relating to the rules for set-aside and income compensation for the price cuts. Price cuts were smaller than originally proposed by MacSharry, but were nevertheless substantial. The impetus of the reforms was to shift from a price support policy to a policy of direct aid for large producers (who in turn were required to set-aside 15% of their arable land), whilst also considering the importance of the environment and the social and economic development of rural areas. Allowances were made in France and Britain where the largest cereal farmers are to be found.

Contrary to the original reform plan, all producers, no matter how large, would receive compensation packages for loss of income.

1992 therefore saw reform of the majority of the market organisations together with important accompanying measures being adopted. As it was expected that some farmers might have difficulty adapting to these new requirements, the reforms were going to be implemented gradually over a three year period from 1993 (that is the three marketing years 1993/94, 1994/95 and 1995/96). Those producers whose incomes had been affected by the lower support prices and from other measures introduced to control production would be compensated for such losses. This was the most radical reform of the CAP since its introduction thirty years earlier. Furthermore, the conclusion of the package also meant an agreement was possible in the GATT world trade talks.

Having examined the proposed reforms in detail above, it is now necessary to examine the actual reforms as agreed by the Agriculture Council in May 1992. First, an examination of changes to the market organisations will take place (arable crops, dairy products, beef and sheepmeat). Any changes to the accompanying measures will then be examined.

2.7.1 Market Organisation Reforms

A. Cereals, Oilseeds and Protein Crops

The final reforms retained most of the proposed features, except the concept of modulation, so fiercely opposed by the larger Community farmers. Cereal prices were to be reduced by 29%, a lower figure than originally proposed. This was expected to result in substantial decreases in production costs for pig and poultry farmers, and for beef producers but to a lesser extent. By lowering cereal prices, it would be possible to reduce institutional prices by 15% in the beef and veal sector and by 5% in the butter sector. Compensation would be paid to producers facing income loss due to support price cuts. However, as proposed in 1991, to be eligible for such compensatory aid producers would have to set aside 15% of arable land (cereals, oilseeds and protein crops) on a rotational basis. Smaller farmers (producing less than 92 tonnes of cereals) would be exempt from set-aside requirements. Non-rotational set-aside would be available in future years but at a higher level than 15%. Producers could cultivate their fallow land on the condition that it was used for non-food

purposes³⁰. As proposed, co-responsibility levies were to be abolished with immediate effect (1992/93).

As from 1993 the temporary rules adopted in December 1991³¹ covering oilseeds would be adjusted to form part of the common system for arable crops. The idea behind this was that the rules and the compensation systems would not favour one crop over another. Oilseed arrangements differed to that of cereals as they did not involve guaranteed prices. Compensation per hectare would come in two instalments, one at the start of the marketing year and the other at the end. Compensatory amounts could vary from region to region as determined by the Member States on the basis of either average cereals yields or yields for oilseeds.

For protein crops, compensatory payments per hectare would replace existing arrangements as from the 1993/94 marketing year. This aid would be equal to the regional yield for cereals (tonnes per hectare x ECU 65).

B. Dairy

Dairy product quotas would be extended until the year 2000. Quota levels would be reduced by 1% in 1993/94 and by a further 1% in 1994/95, less than originally proposed. The 1992 reforms did not include a reduction in milk prices as proposed by MacSharry, although a 2.5% cut in butter prices would take place in 1993/94 and again in 1994/95. As proposed, the dairy co-responsibility levy was to be abolished from the start of the 1993/94 marketing year. To avoid further surplus production, a premium would be payable for young (8/10 days) male dairy-breed calves withdrawn from production (i.e. slaughtered).

C. Beef

It was agreed that the intervention price for beef and veal be reduced by 15%, as proposed in 1991, over three years from 1 July 1993. To compensate for income loss, beef production premiums were to be increased. However, for environmental protection reasons and in order to confine compensation to grassland farms not benefiting from reduced feed cereal prices, these premiums would only be available up to a maximum number of animals per hectare of fodder area. Four premium schemes would be available to eligible beef and veal producers: male bovine premiums (to which deseasonalization premiums may be added in regions experiencing serious problems as a result of seasonal supply); suckler cow premiums; calf conversion premiums; and extensification premiums. The premium for male bovine animals

would be paid on the first 90 animals at 10 months and 22 months. A regional reference herd would be determined by Member States which must be equal to the number of premiums paid during 1990, 1991 or 1992. Member States would be free to choose one of the three years as the reference year. The suckler cow premium would be paid on the number of animals on which a premium was paid in the reference year, again to be chosen by Member States from 1990, 1991 or 1992. Suckler cow premium rights would also be transferable. In order to protect the environment by encouraging less intensive production, an additional premium would be added to that paid on male bovine animals and suckler cows if stocking density over the year was found to be less than 1.4 livestock units per hectare.

Finally, intervention levels for beef would be reduced from 750,000 tonnes in 1993 to 350,000 tonnes in 1997. A safety net would operate when the market price fell below 60% of the intervention price.

D. Sheepmeat

A ewe premium quota was to be introduced, with quotas determined by Member States from 1989, 1990 and 1991 marketing year. The number of premiums per producer were not to be reduced as proposed. The ceilings would continue to be fixed at 1,000 ewes in LFAs and 500 ewes elsewhere. 50% of the full rate would be paid for any ewes above those ceilings. Producers' entitlement to sheep annual premia (SAP) would be determined by the number of ewes receiving premium in the 1991 marketing year.

Special rules governing transfers between producers, the allocation of premiums to new producers and the creation of national reserves would be adopted at Community level³². In the UK a 1% national quota reserve was to be established with an additional reserve of 1% allocated to producers in LFAs. Premium rights could be transferred to other producers. In such cases, between 1-15% of the premium would be transferred to the national reserve where it would be allocated to new producers and other priority producers. Member States would be responsible for ensuring that premiums were not transferred from sensitive zones i.e. areas particularly dependent upon sheep production.

2.7.2 'Accompanying Measures' Reforms

(i) Agricultural-environmental action programme

Member States would implement the agri-environmental action programme by means of multiannual zonal programmes. Producers who voluntarily took part in one or more of the requirements (see proposals above) for at least five years, would receive aid to compensate for loss of income.

(ii) Afforestation of agricultural land.

For afforestation of agricultural land, the Council adopted new rules, fundamentally different to those laid down in 1989³³. The new rules comprised an aid scheme covering afforestation costs; aid per hectare to cover the first five year's upkeep of plantations; annual premia per hectare to compensate for loss of income (for a maximum of 20 years) due to afforestation of agricultural land (premiums for agricultural holdings would be four times that available to other landowners); investment aid for improvements to woodland, and provision of shelter belts, firebreaks, and forest roads. Member States were required to draw up programmes to comply with these rules which were to be implemented by 31 July 1993.

(iii) Early Retirement Scheme

The early retirement scheme was not to be compulsory for the Member States as proposed by MacSharry. Instead Member States *could* institute a Community aid scheme for early retirement from farming for farmers or farm workers over 55 years of age. Compensation could take a number of different forms, depending on the retirement schemes in operation in the Member State: retirement grants; annual compensation; annual allowances per hectare; a retirement pension supplement. Payment would not continue for more than 10 years, or beyond the age of 70 years.

For all three accompanying measures, 50% of aid expenditure would be borne by the Community budget (reaching 75% in Objective 1 regions).

2.8 After the MacSharry Reforms

2.8.1 Early Reactions to the MacSharry Reforms

Reactions to the reforms in the Member States were mixed although the national farmers' associations in the EC were united in their opposition to the reforms (Daugbjerg, 1999). In Britain, the farmers' organisations reluctantly approved the deal. The President of the National Farmers' Union stated: "It will still hurt but this package is better than the original and ... there is no point in believing that taxpayers should go on paying for surpluses nobody wants" (*The Guardian*, 22/5/92, p. 1). French farmers immediately protested against the deal, Italian farming lobbies were angry against what they believed to be an unsatisfactory agreement and the Germans felt that farms in many regions were in danger of collapse because of subsidy cuts. Ray MacSharry, however, said that the agreement would put "European agriculture on a much sounder footing in the future by reducing surpluses which were being produced for no market" (*The Guardian*, 22/5/92, p. 1). The Council of Ministers proclaimed that the MacSharry reforms were an "historic revolution" in European agriculture (ibid.).

But many economists argued that while the reforms would succeed in reducing production, the instruments for change were fundamentally flawed (Buckwell, 1993; Tangermann, 1992; Haynes, 1992; Rollo, 1992). Buckwell argued that "the changes are better viewed as a step in the right direction, rather than as a once-and-for-all reform" (1993, p. 14). Similarly, Tangermann (1992) argued that the reforms contained deficiencies that would require further attention in a number of years time: "Would it not make sense to adopt policies now which avoid the need 'to reform the reform' in a few years?" (p. 21). Rollo (1992) argued that set-aside was unlikely to be as successful as hoped. He warned against the possibility of idle land increasing in fertility as it was rotated into production, raising productivity further. Buckwell (1993) also saw flaws in the introduction of set-aside as a major part of the cereals regime. While price supports encouraged farmers to produce more, restrictions were at the same time being introduced to restrict production. Would farmers not naturally find any means to get round the restrictions? Over 60 years of set-aside in the USA had shown that "the proportionate reduction in output is always a fraction of the proportionate reduction in the land which farmers have been paid to take out of production" (Buckwell, 1993, p. 15). Buckwell (1993) further suggested that difficulties lay in the policing of set-aside. With 400,000 cereals farmers with 21

million hectares having set-aside obligations, there would be a huge administrative load, and ensuring compliance across the Community would prove to be near impossible. He concludes:

... it would be satisfying to be able to record that the 1992 reforms marked a clean break with the past, and that the CAP is now entering a more logical, less distorting, more efficient phase of existence. Unfortunately, while there have been some moves in the right direction, the CAP will remain an expensive, contradictory muddle for some time to come (p. 15).

Haynes (1992) argued that to fully benefit from the CAP reform, further changes needed to be made: set-aside should be abandoned; payments to producers should not be linked to the crops grown; national exchequers should bear the cost of environmental measures. He argued that such modifications to the CAP must be taken into account if further reform was to take place in the 1990s, an event which he believed was very likely to happen.

The Commission itself agreed that the 1992 reform "does not solve all the EC's farming problems" (CEC, 1993a, p. 34), realising that it would take several years for all the mechanisms of the reform to be put in place, many of which were complex and up to that point untried. Speaking at a conference in Perth, Scotland in November 1993, the Assistant to the Director-General in DG VI (Agriculture) stated that:

... the new CAP may not be perfect, but it is certainly perfectable. The new CAP may not be a total answer, but it is certainly an answer to some of the more severe criticisms which have been levelled against the Commission" (de Lacroix, 1993).

Policymakers clearly recognised that even so soon after reform, problems still existed with the CAP. But they believed that given time the new CAP would work. Swinbank (1993) was not so sure. In examining the reforms, he suggested that a further reform debate would be launched in the mid to late 1990s. He argued that when this was to happen "the 'reforms' of 1992 are likely to be dismissed as of little relevance" (p. 359). He concluded his paper by suggesting that "[c]onsumers (and the food industry), tax-payers, and overseas competitors ... will no doubt be clamouring for CAP reform before the end of the decade" (p. 371).

2.8.2 Signs of Success

Despite the early criticisms directed towards the new CAP, the first successful results had become visible by the end of 1993. Rene Steichen, Agriculture Commissioner, announced on 30 November that reform in the arable sector had been successful in

reducing production, with cereal production in 1993 around 16 million tonnes lower than it would otherwise have been (CEC, 1993b, p. 1). This he felt was a clear rebuttal to sceptics and analysts who claimed the CAP reform could not be implemented and was doomed to failure. Speaking at a farming conference in January 1994, Steichen (1994, p. 3) also stated his satisfaction at “the measures on environmentally friendly production methods and reforestation [which] have found an important response among Member States”.

In September 1994, despite being still in a transition phase, reform success reached the headlines again (*Financial Times*, 8/9/94, p. 36). The 1994 grain harvest was expected to be around 160 million tonnes, 25 million tonnes less than in 1991. Cereal mountains had been reduced from 33 million tonnes per annum to 16 million tonnes and beef intervention stocks had fallen from 1.1 million tonnes to under 250,000 tonnes. EC consumption of home grown cereals for animal feed had risen by 5 million tonnes in 1993 - well on the way to reaching the 11 million tonnes rise the Commission was hoping for by 1996. Steichen stated that this was a sign that the MacSharry reforms were working. Responding again to skeptics, he said that "In the cereals sector, there's really no need to go any further" (*Financial Times*, 8/9/94, p. 36).

Nevertheless, further reforms had been agreed in 1994 to contain beef production. The Commission was concerned that an increase in production could occur by the end of the decade due to cyclical reasons. The number of special support payments available to producers for male beef animals had been reduced from 11.5 million to 10.25 million. Overall, however, Steichen argued that EC farmers had generally benefited from the MacSharry reforms. Indeed he pointed to one fault of the reforms - that of too much compensation being paid to large cereal farmers who set-aside 15% of their land. The original 1991 proposals had limited the amount of set-aside land for which farmers received compensation to 7.5 hectares but this had met with fierce opposition at the time, especially from the UK Agriculture Minister and concessions had had to be made. Steichen (1994) concludes:

Thanks to the CAP reform, we can now look forward towards a more stable and coherent framework for our agriculture. If, as I firmly believe and as the first results seem to indicate, the reform works as planned, we shall see the end of artificial food mountains or lakes and enjoy a much better balance between supply and demand. At the same time, with the accompanying measures and our ambitious programme for rural development, we have laid the groundwork for the preservation of our environment and the rural communities which form such a crucial element of Europe's heritage (p. 13).

2.8.3 Further CAP Reform?

In the summer of 1994 some prominent UK farmers joined environmentalists in a campaign to reform the CAP, describing it as "an astonishing abuse of public money" (*Financial Times*, 5/7/94). A spokesman for the Soil Association, Britain's leading organic farming organisation, pointed out that "the more intensively you farm, the more handouts you get". Critics of the £3 billion paid annually in subsidies to UK farmers argued that the situation in the countryside was economically and politically unsustainable. One critic, a large-scale arable farmer, admitted having been converted to the environmentalist cause. Calls were put forward to redirect CAP subsidies from production support to maintaining the landscape and wildlife, reducing pollution and rebuilding rural economies. They also wanted to abandon set-aside, arguing that compensation payments to producers who leave the land uncultivated was "insanity".

In September 1994 the Commission published a report which it had contracted to a group of independent agriculture experts, recommending wide CAP reform, including putting an end to production quotas and set-aside payments to producers (CEC, 1994). It was argued that:

radical reform of the CAP would lighten the burden on taxpayers, reduce consumer prices and ease the integration of farm-intensive economies of central and eastern Europe into the European Union (*Financial Times*, 28/9/94, p. 1).

Some of the main recommendations put forward included:

- (i) cutting EC farm prices to near world prices in all sectors. Flat rate tariffs should replace all remaining import levies and quotas.
- (ii) phasing farm subsidies into national budgets over 7-10 years. Member States would thus be allowed to choose how to distribute the freed-up funds.
- (iii) compensating Member States who may experience heavy penalties through loss of EC financial support through the regional, social and cohesion funds.

The Commission, however, made it clear in the foreword to the paper that it did not support these recommendations. The decision to publish the paper had been taken in order to stimulate discussion and debate. A wave of protests followed publication as farmers showed their resistance to further CAP reform (*Financial Times*, 3/10/94, p. 19). There were doubtless some farmers who realised that further reform would be inevitable if the EU was to meet its commitments under the GATT and if it was to enlarge into central and Eastern Europe. The commitment of the EU to enlarge eastwards brought with it the recognition that the CAP needed re-examination. The high cost of the CAP on EU consumers and taxpayers was further cause for reform.

The OECD estimated that in 1993 the CAP cost each person in the EU \$385, representing an average subsidy of \$980 per hectare of farmland.

These points suggested a case for further reform of the CAP but some Commission agriculture officials were against such moves. Steichen, backing the MacSharry reforms, said it would not be right to "create fresh uncertainty in the farming community when the reforms are working so well" and went on to state: "I don't think there's a need to change the CAP" (*Financial Times*, 3/10/94, p. 19). But the aforementioned report showed that not all Commission officials were in agreement. Ray MacSharry was nevertheless convinced that the CAP would still be in existence in 2010. "I see a fine-tuning but no revolutionary change. There's no doubt that while there will be a European Union there will be a CAP" (ibid.).

2.8.4 Radical or Moderate Reform?

When the MacSharry reforms were established in May 1992 they were heralded by many as radical and fundamental (for example, Hendriks, 1994; Josling, 1994). Even after the reforms had been fully implemented, some analysts were still looking back and referring to the radicalism of the reforms. Patterson (1997, p. 137) refers to the reforms as "a radical new initiative" with new policy instruments representing "a fundamental shift in agricultural support programs in the EC". Levy and Stancich (1998), critical of sceptics on the radicalism of the reforms, argue that "it succeeded where previous attempts at change had been watered down to ineffective measures..." (p. 20). Skogstad (1998), who agrees that these were "the historically most significant and far reaching reforms to the CAP" (p. 472), suggests that they were labelled by analysts as fundamental because of three aspects of the 1992 reforms. Firstly, the reforms would prevent the CAP budget from reaching the higher levels that would have resulted in the absence of reform³⁴. Secondly, the shift from hidden consumer subsidies to transparent taxpayer subsidies would possibly lead to a taxpayers revolt which in turn might force more extensive future reform. Thirdly, the reforms would transfer European agriculture away from state assistance and state price supports.

However, the use of the term 'radical' in relation to the CAP reforms has also been subject to debate amongst analysts. Grant argues that: "[t]he MacSharry reforms do represent the most comprehensive reform of the CAP to have been agreed so far..." (1995b, p. 162) but "...they have not fundamentally changed the nature of the policy

itself” (1995a, p. 2). Grant therefore refers to the MacSharry reforms as “piecemeal” (1995a, p. 3). Keeler (1996, p. 127) suggests that:

Although a significant reform of the CAP was achieved in 1992, its liberalizing effects fell far short of the goals of its sponsors and actually increased CAP costs in the short run.

Skogstad (1998) compares the agricultural policy reforms that took place in the US and the EC/EU in the 1990s. She argues that in contrast to the 1996 US farm bill, the Federal Agricultural and Improvement reform (FAIR) Act, which depicted a radical change in American farm policy³⁵, “... the MacSharry reforms ... fell short of paradigmatic change. Although introducing new, market-liberalizing policy instruments, the underlying goals of the CAP remained intact” (p. 463). Swinbank and Tanner (1996) argue that because the CAP reforms were devised to uphold farmers’ incomes and keep them on the land i.e. maintaining the state assistance paradigm (Daugbjerg, 1997), to describe the changes as ‘reform’ was perhaps not appropriate. Daugbjerg (1999, p. 145) concurs, stating that “[a]lthough the reform was the most far-reaching in the history of the EC, one cannot claim that it was radical”. He cites two main reasons for this. Firstly, despite the significant reduction in cereal prices following the reforms, the cereals sector would still continue to be highly regulated as the EC continued to intervene in the market to protect farmers “by buying up for stockpiling or by subsidising exports in order to maintain prices at a certain level”. Secondly, farmers were still highly subsidised to compensate for income losses resulting from price cuts. Although one of the main aims of the reforms was to reduce spending increases and indeed the reforms would reduce the percentage of the EC budget relating to agriculture (a predicted 45.3% in 1997 compared to 60% in 1988)³⁶, the introduction of compensatory deficiency payments would actually lead to an increase in CAP costs. The Commission itself estimated that the reform would lead to an annual increase in expenditure of around 2.3 billion ECU in addition to the 4 billion ECU to be spent on accompanying measures over the first five-year period (CEC, 1991b). The Commission argued that in the absence of reform such expenditure was estimated to be much higher and therefore such increases were fully justifiable. Therefore Daugbjerg (1999) argues that the new policy instruments did not reduce levels of subsidisation. Rather, citing OECD data he demonstrates that while direct or indirect subsidies (the PSE percentage) accounted for 56% of arable farmers’ income in 1992 by 1994 this had risen to 57%³⁷.

Grant (1997, p. 183-186) also presents data to indicate that the MacSharry reforms did not achieve all that they had set out to do i.e. subsidy and budgetary costs

continued to rise. For example, the net cost of the CAP was forecast to rise by 62% between 1990 and 1996 (p. 183). Furthermore, CAP reform did little to ease the burden of the CAP on consumers who have to pay more for their food as a result of the CAP. And overall, farmers do not significantly benefit from the CAP. As the bulk of total CAP costs go to the suppliers of goods and services to farmers, Grant states that as little as 11% of costs constitute net farm income (p. 185). Grant therefore believes that: “[a]lthough the MacSharry reforms represent the first real progress towards significant revision of the CAP since its inception, the policy remains substantially unreformed” (1997, p. 183).

2.8.5 Summary

This chapter has examined the evolution of the CAP up to the mid 1990s following the implementation of the MacSharry reforms. These reforms have been examined in depth and reactions to the reforms have been discussed. While many analysts still believe today that these reforms were radical, many argue that they were but moderate in that did not go far enough in solving the Community’s agricultural problems. The chapter has therefore portrayed the agricultural situation in the EU as it stood at the commencement of this research³⁸. The reforms had been introduced in all the relevant sectors and following a period of uncertainty in the early 1990s, farmers were gradually ‘coming to grips’ with the reforms. The aim of this study is to examine the effects of the reforms on Grampian Region in Scotland during the implementation period up to 1995. The following chapter therefore sets the scene by presenting an overview of agriculture in Grampian during the period 1991-95.

Endnotes

¹ For a detailed analysis of the problems of European agriculture in the 1930s, see ECE/FAO (1954).

² See Grant (1997) for a brief discussion on present day technological innovation. As technical progress continues e.g. powered machinery, veterinary drugs, genetic engineering, the implications of such advances are vast.

³ These objectives are summarised by Butterwick and Rolfe as follows (1968, p. 6-7):

- (i) to increase trade in agricultural products between member countries and with third countries and eliminate all quantitative restrictions;
- (ii) to maintain a close correlation between structural and market policies;
- (iii) to achieve a balance between supply and demand, avoiding encouragement of surpluses, and giving scope to the comparative advantage of each region;
- (iv) to eliminate all subsidies tending to distort competition between one country or region and another;
- (v) to improve the rate of return on capital and labour;
- (vi) to preserve the family structure of farming;
- (vii) to encourage rural industrialisation so as to draw away surplus labour and eliminate marginal farms, and to give special aid to geographically disadvantaged regions.

⁴ See, for example, the Wageningen Memorandum (1973) and the Sienna Memorandum (Ritson, 1984).

⁵ For an analysis of the problems that these changes in the economy posed for policymakers, see Marsh (1989).

⁶ On 1 January 1995 the EU was further enlarged with the accession of Sweden, Finland and Austria (Norway voted against joining), bringing the number of member states up to 15, with a total population of 370 million.

⁷ Rosenthal (1975) examines these 'multilevel, criss-crossing controversies' as part of an examination of decisional processes in the EC.

⁸ *The Times*, March 24, 1971.

⁹ See Chapter 9 which discusses the moderate nature of all CAP reform. It addresses the issue of radical versus moderate CAP reform and explains why future reform is also unlikely to be fundamental.

¹⁰ Monetary Compensatory Amounts (MCAs) was the system of expensive subsidies and levies that allowed agricultural commodities to be traded between different Member States as though common prices existed.

¹¹ There are 50% fewer farmers in the six original members of the Community today than there were in the 1960s (CEC, 1993a).

¹² See Kay (1998) for an in-depth description of the history of the milk quota reforms introduced in 1984.

¹³ For a detailed account of the policy process as it functioned in the 1984 imposition of milk quotas, see Moyer and Josling (1990, pp. 66-78).

¹⁴ See, for example, Coleman and Tangermann (1999), Kay (1998), Epstein (1997) and Grant (1997) who examine the causes, both internal *and* external to the EU, which led to the MacSharry reforms.

¹⁵ This discussion of the GATT negotiations only covers the details of the Uruguay Round which occurred before May 1992 as it was this period of the Round which was relevant as a cause of and influence on the MacSharry reform process. For an account of the Uruguay Round after the enactment of the MacSharry reforms, see Kay (1998) who considers the effect of the reforms on the final agreement, and Hassan (1996).

¹⁶ The Cairns Group is the name given to the group of agricultural exporting countries whose members are Argentina, Australia, Brazil, Canada, Chile, Columbia, Hungary, Indonesia, Malaysia, New Zealand, the Philippines, Thailand and Uruguay.

¹⁷ There is much literature available on the negotiations and issues of the Uruguay Round of GATT negotiations, including for example, Kay, 1998; Fennell, 1997; Harvey (1997); Josling *et al.* (1996); Swinbank and Tanner (1996); Paeman and Bensch (1995); Ingersent *et al.* (1994); and, Moyer (1993). See also *The Guardian* (21/11/92, p. 40) for a quick summary of the Uruguay Round over the 10 year period 1982-92.

¹⁸ The USA was first in tabling its proposal in July 1987, followed by the Cairns group and the EC proposals in October 1987, together with a separate paper by Canada who, though endorsing the Cairns group proposal, produced its own proposals in the event of the Cairns group not agreeing on a position. In December the Nordic countries tabled their proposals with Japan following suit in February 1988. A group of food importing developing countries also met to organise their ideas.

¹⁹ See Moyer and Josling (1990) for the main elements of the most significant of the six GATT negotiating proposals.

²⁰ See *Agra Europe*, 3/1/92, 'GATT: Details of the Dunkel 'Compromise' Paper', pp. E/1-E/3.

²¹ See *Agra Europe*, 27/11/92, pp. E/1-E/4 for the Commission text of the EC-US bilateral agreement on agriculture.

²² It was feared that countries such as Australia might argue that the agreement did not go far enough while Japan might argue it went too far, affecting the Japanese rice market in ways unacceptable to Japanese farm policy makers. The French predictably, strongly disagreed with the US-EC accord (see Chamberlain (1993); *Agra Europe*, 27/11/92, pp. E/4-E/5; *The Economist*, 28/11/92, pp. 48-51, *The Economist*, 11/9/93, pp. 35-36; *The Economist*, 23/10/93, p. 46).

²³ The agreement was clarified in order to pacify France and indeed the new agreement benefited French farmers more than most (*The Guardian*, 15/12/93, p. 1 and p. 12; *The Economist*, 18/12/93, p. 44).

²⁴ See Taylor (1993) who examines the highlights of the areas in the GATT Accord.

²⁵ See also Epstein (1997) who examines the policy process that formed around the agricultural dossier in France and its links to the policy community model of decision-making.

²⁶ The olive oil regime had already been reformed in 1990, and the sugar regime in 1991. The regimes for both fresh and processed fruit and vegetables were satisfactory with production and expenditure under control. Reform in the wine sector would take place later, being presented and examined separately due to the technical complexities involved.

²⁷ The average cereal yields in the Community in 1990/91 was between 4.5 and 5 tonnes/hectare, but it must be noted that this figure was subject to fluctuations (from under 1 tonne to over 10 tonnes/hectare) depending on agronomic conditions and farm structure.

²⁸ Bovine Spongiform Encephalopathy. See Note 5 in Chapter 7 for more on BSE.

²⁹ COM(91)258, 22 July 1992.

³⁰ Any arable crop, bar fruit and vegetables, forest trees and vines, could be grown on set-aside land provided each had an eligible end use and that the producer had a contract with a final processor prior to sowing the crop. Eligible land uses are:

1. vegetable fats and oils for non-human consumption or animal consumption;
2. agricultural products providing energy in power stations;
3. non-food products using sugarbeet;
4. ethyl alcohol as a means of fuelling motors;
5. products suitable for starch production aid;
6. vegetable plaiting aids; and,
7. plants used generally for perfumery or pharmacy purposes, or for insecticides and fungicides.

³¹ OJ L 356, 24/12/91.

³² See Bailey (1992) for a commentary of UK rules in this area.

³³ Regulation (EEC) No. 1609/89 of 29 May 1989.

³⁴ Skogstad (1998) cites *Agra Europe* (No. 1448, 12 July 1991, p. E/1) which states that in the absence of reform the CAP budget was expected to be 42.7 billion ECU in 1997 compared to a guaranteed 37.3 billion ECU following reform.

³⁵ For more analysis on US farm policy in 1996 see Josling (1998) and Paarlberg and Orden (1996).

³⁶ Skogstad, 1998, p. 473.

³⁷ See OECD (1995, p. 214; 1997, p. 78).

³⁸ Further CAP reform took place in 1995 when the Commission produced its *Agricultural Strategy Paper* (CEC, 1995). Although outlining three options for the future direction of the CAP, this paper was concerned mainly with the difficult challenges regarding the EU and accession of Central and Eastern European countries (CEECs) (see also Hartman, 1998; Buckwell and Tangermann, 1997; and, Grant, 1997). This was also the theme for another reform proposal in 1997 (CEC, 1997) when the Commission published its *Agenda 2000* paper (see also MAFF, 1999a, 1999b, 1999c; Zervondaki, 1999; Ahner, 1998; CEC, 1998; and Meyers and Womak, 1997).

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Chapter 3

Agriculture in Grampian: An Overview

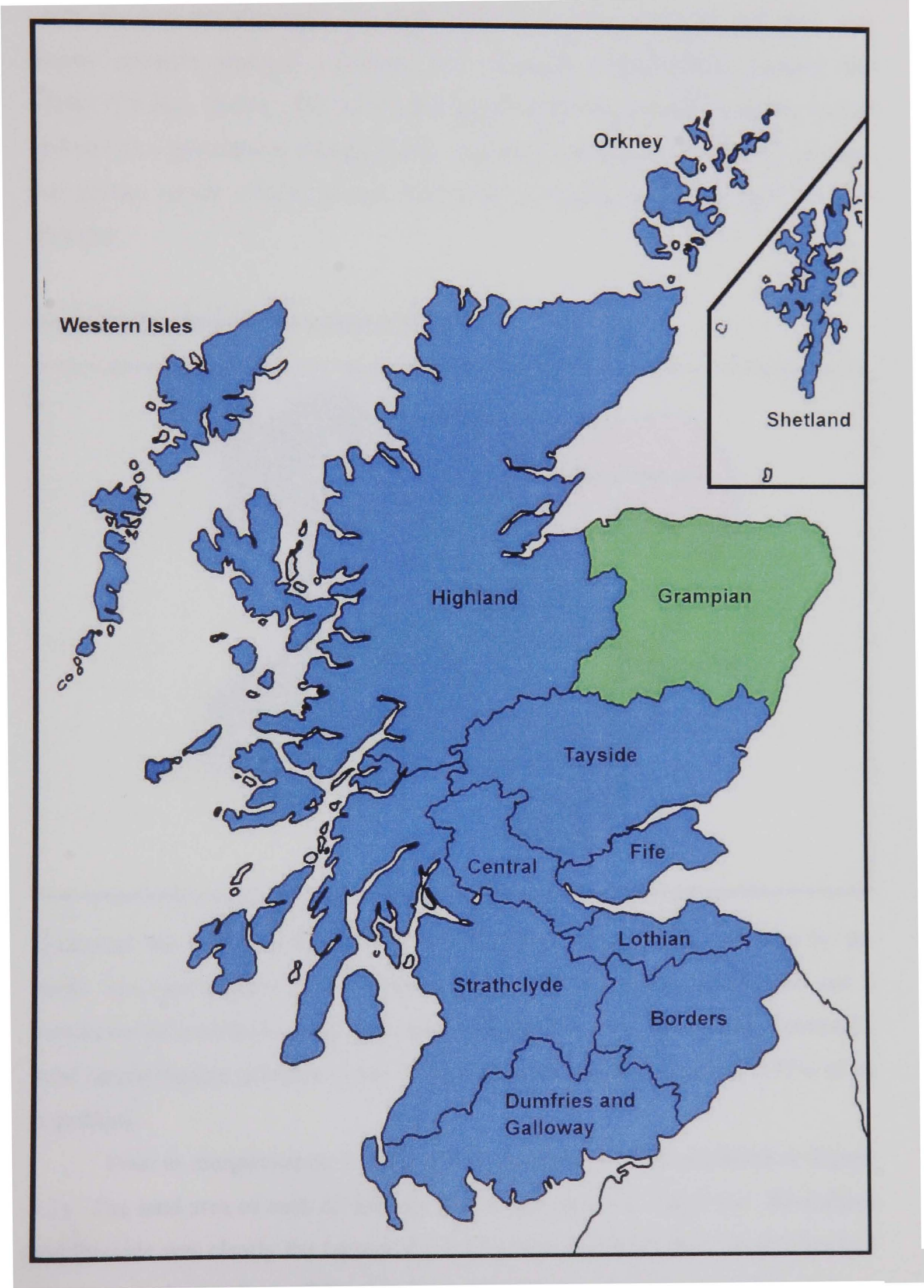
3.1 Introduction

This chapter is an overview of agriculture in Grampian. It explains the agricultural situation in the region during the period 1991-95 (which covers the proposals and introduction of the MacSharry CAP reforms and the implementation period up to 1995 - the final year of the transitional period). The importance of agriculture to the region is detailed, as is the importance of Grampian agriculture to Scotland. Grampian is compared to Scotland as a whole as a 'control' for measuring the changes resulting from the reforms. Only those sectors of particular importance to the region are examined e.g. intensive crops (field vegetables and orchard fruits), although important in Scotland as a whole, do not account for a large percentage of agricultural land in Grampian and so will not be discussed.

The general features of Grampian are outlined in Section 3.2 followed by a short review of the available literature on the subject of Grampian agriculture and the effects of the MacSharry reforms (Section 3.3). After a brief summary of the key changes affecting Grampian agriculture (Section 3.4), the chapter goes on to examine relevant agricultural data in detail. Much of the data presented here is derived from the Scottish Office Agriculture, Environment and Fisheries Department (SOAEFD) annual censuses of main holdings, which collect information on crops and livestock¹. Section 3.5 examines the region's agricultural structure (land use and tenure, agricultural area, agricultural holdings) and arable use (cereals, set-aside oilseed rape and woodlands) while Section 3.6 examines the main livestock sectors in the region i.e. beef, dairy, sheep, pigs and poultry. Section 3.7 describes levels of farm labour in the region, which involves an examination of full-time and part-time occupiers, and the different types of agricultural labour. The summary and conclusions are presented in Section 3.8.

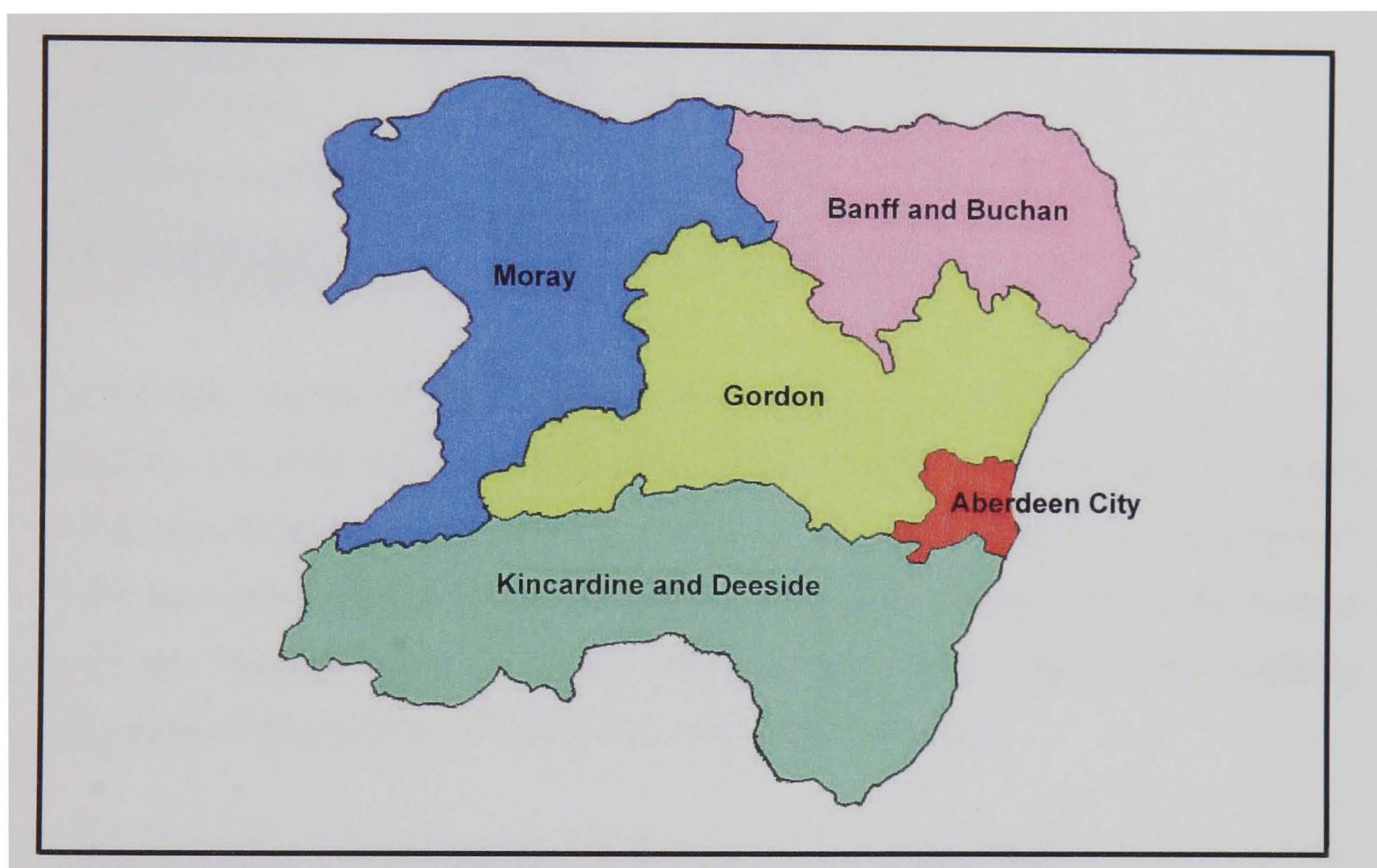
3.2 General Features of the Region

Figure 3.1 Location of Grampian and the other Scottish Regions



Prior to 1996 a two-tier local authority structure existed in Scotland, where the top tier was the regional authority (Grampian Region in this case) and the second tier was the district councils (five in this case: Aberdeen City, Banff & Buchan, Gordon, Kincardine & Deeside and Moray). Following local government reorganisation in 1996² the two-tier structure was replaced by a one-tier structure and three new unitary councils emerged: Aberdeen City Council, Aberdeenshire Council and Moray Council. Because the survey data gathered for this project covers the period prior to local government reorganisation, reference will mainly be made to the two-tier system which existed at that time (that is Grampian Region and the five districts).

Figure 3.2 The districts in Grampian Region



Grampian lies in the north-east corner of Scotland, bounded on two sides by the North Sea (see Figure 3.1). With an area of 8,700 square kilometres and a population of over half a million people, Grampian is, in both respects, Scotland's third largest Region accounting for 11.1% of Scotland's land area and 9.71% of its population.

Prior to reorganisation in 1996, Grampian had five different districts (Figure 3.2). The land area of each district (as at 1991) is shown in Table 3.1. Kincardine and Deeside was clearly the largest of the five districts whilst the City of Aberdeen District was the smallest. Table 3.2 shows how the population was spread between

these five districts (using data from the 1991 Census). From this we can see that while 41% of the Region's population was located in the City of Aberdeen in 1991, only 10% were found in the Region's largest district of Kincardine and Deeside.

Table 3.1 Land area of Grampian districts, 1991

District	Acres	Hectares	Square Miles	Square Kilometres
City of Aberdeen	45,528	18,447	71.22	184.47
Banff & Buchan	377,153	152,634	589.30	1,526.29
Gordon	547,182	221,444	854.97	2,214.37
Kincardine & Deeside	629,743	254,857	983.97	2,548.48
Moray	549,597	222,422	858.74	2,224.14
Grampian Region	2,149,257	869,804	3,358.20	8,697.75

Source: GRC (1994, p.114).

Table 3.2 Population of Grampian Region, 1991

District	Population	Percentage of Total
City of Aberdeen	204,885	40.7
Banff and Buchan	85,303	16.9
Gordon	76,642	15.2
Kincardine and Deeside	53,442	10.6
Moray	83,616	16.6
Grampian Region	503,888	100.0

Source: Grampian Business Directory (1995).

In the last two decades oil has played an important part in the economy of the Region. In 1992 total oil employment (both onshore and offshore) was 52,500 while non-oil employment 190,760. Table 3.3 shows a breakdown of employment in terms of Grampian's most important non-oil sectors, clearly showing its diverse economy ranging from the more traditional agriculture, fishing and distilling industries to the more recent North Sea Oil related industries.

Table 3.3 Numbers employed in non-oil sectors in Grampian, 1992

Sector	Numbers Employed
Agriculture	4,150
Retail	22,440
Food & Fish Processing	11,050
Distilling and Malting	1,805
Construction	14,300
National/Local Government	49,050
Engineering	7,080
Fishing	2,200
Hotel & Catering	16,150
Finance	13,700
Textiles	2,000
Paper	4,200
Total	190,760

Source: Grampian Business Directory (1995, p. 9).

In terms of agriculture, Grampian is one of Scotland's most agricultural Regions. In 1995, three quarters of Grampian's land area was used as agricultural land, that is nearly 640,000 ha (SOAEFD, 1995a). Although the agricultural land lies mainly in the north and east of the Region, the west of the Region also contains very large upland tracts where only extensive livestock farming is possible. Indeed, 50% of West Grampian's land area is upland and over 94% of the land is less favoured (GRC, 1993). The Region is therefore split into two separate areas in terms of there being upland and lowland areas. Upland Grampian covers an area of 437,000 ha rising from 200 metres in places to the 1,400 metre peaks of the Cairngorm mountain range. Here, Grampian can boast of having two of Britain's four highest peaks. This upland area falls in Land Capability Classes 4 to 7 as determined by the Soil Survey of Scotland (Crabtree *et al.*, 1987). This classification of land is really only suitable for grazing purposes and therefore livestock rearing is the main agricultural activity in the area. Class 4 land can be suitable for short arable breaks. Such arable land tends to be concentrated within the four main river valleys of the Spey, the Deveron, the Don and the Dee. Virtually all the upland Grampian area is classified as Less Favoured Area (LFA). Edmond *et al.* (1993) and Crabtree *et al.* (1987) both illustrate that the variation of farm types across the Region forms a roughly NW-SE divide between LFA and non-LFA farm types.

Climate, altitude and terrain cause severe problems for the farms of Upland Grampian. Problems include excessive wetness, exposure to wind in all seasons, severe winter temperatures (with early frosts in sheltered areas) and heavy snowfalls, particularly in Western parts where there are farms at high altitude (see Birse and Dry, 1970). All this leads to delayed ploughing as a result of a late spring and means that the growing season is shortened by up to 40 days compared to parts of lowland Grampian. Soil erosion and severe slope also cause problems in these areas and as a result the land is often given over to grouse moors and deer forests. Overall these major problems mean that higher land is less productive than that of the lowlands. In addition, the farms of Upland Grampian are disadvantaged by remoteness from markets and limited opportunities for off-farm activities for further income generation. Farmers in upland Grampian thus face a variety of problems as a result of their location. However, lowland farmers are not without their locational problems either as adverse weather conditions can also affect parts of lowland Grampian. On the east coast cold south and south east winds can often delay

growth in spring while later in the year the North Sea haar can inhibit drying and cause delays in the harvesting of crops.

3.3 Literature on Grampian Agriculture

Much has been written on the history of agriculture and the historical development of the Common Agricultural Policy (examined in Chapter 2) including texts by Coppock (1963), Butterwick and Rolfe (1968), Andrews (1973), Marsh and Swanney (1980), Hill (1984) and Fennell (1987; 1997). By the late 1980s and early 1990s much literature was also available on reform of the CAP such as Pearce (1981), Ritson (1984), Burtin (1987), Marsh (1989), Moyer and Josling (1990), Hubbard and Ritson (1991) and de Salis (1991). At the time of commencement of this research project between 1993-94, a large number of publications had already examined the recently implemented (1992) MacSharry CAP reforms. Academic journal articles were particularly plentiful on the subject of reform and the consequential changes to farming (see for example Bailey, 1992; Haynes, 1992; Koester and von Cramon-Taubadel, 1992; Rollo, 1992; Tangermann, 1992; Buckwell, 1993; Copus and Thomson, 1993; Swinbank, 1993) and as the transitional period progressed and was completed many writers analysed the reforms in depth (such as Ingersent *et al.*, 1998; Kay, 1998; Ritson and Harvey, 1997; Grant, 1997; and Folmer *et al.*, 1995).

Amongst a very long list of publications on the 1992 CAP reforms, a little evidence has been offered as to the broad effect of these reforms in different member states, mainly through the research findings of agricultural economists³. Baltas (1997) examines the consequences of CAP reform on the peripheral countries of the EU (Greece, Ireland, Portugal and Spain) but argues that “[l]iterature related to the effects of CAP reform on the agriculture of the peripheral countries is rather limited” (p. 334). Other member state studies include Ackrill *et al.* (1998), Donaldson *et al.* (1995), Wallace and Kirke (1993), and Reid (1993). Unfortunately, some studies carried out in mainland EU countries are published in languages other than English such as Mothes (1995) and Barlier (1993).

A small number of studies have concentrated on the effects of the reforms in Scotland. Copus and Tzamarias (1991) presented a paper on the MacSharry reform proposals of July 1991, examining the changes proposed and estimating their

impact in Scotland, in terms of output and the effects on farms of different sizes. Following the introduction of the reforms Skea (1993) assessed the net effect of the changes on four different types of farm in Scotland. The Scottish Agricultural College published a discussion document in 1993 summarising work being conducted at the time by a number of agricultural economists (SAC, 1993). Following the completion of the transitional period of the reforms, Copus (1997) assessed their impact on sustainability and cohesion in Scotland, analysing trends in rural employment, agricultural output and subsidy dependence levels.

Some studies on the impact of reform in Scotland were more specific in that they examined specific sectors. For example, Ramsay's (1993) examination of *Prospects for Arable Farmers in Scotland*, Cook's (1993) inquiry on *The Prospects for Scottish Livestock Farming*, Doyle and Tweddle's (1993) *A Look at Dairy Farming* or Mainland's (1995) study of *The Impact of the CAP Reforms on Scotland's Poultry Industry*. Other research on Scottish agricultural sectors includes Cook (1992), Dalton (1992), Revell (1992a), Revell (1992b), Skea and Sutherland (1992) and Middleton (1993).

Whereas, as demonstrated above, some literature is available on the broad effects of CAP reform at a national level (in particular, on Scottish agriculture), few studies have attempted to assess the impact of the reforms at a regional level. An OECD case study on the role of the agro-food sector in the rural economies of two French regions, Brittany and Burgundy, includes an evaluation of CAP reform in these regions (OECD, 1998). However, it is the case again that many are written in foreign languages such as Boussemart *et al.* (1996), Carles *et al.* (1995), Campagne (1994), Carero *et al.* (1994), Castillo-Valero and Pardo-Piquerar (1994), and Mormont (1994). In Scotland, regional studies include a postgraduate study by Cursiter (1993) which examines the effects of the reforms on farming in Orkney, and Shucksmith (1999) who examines the effects of the reforms on crofting in the Isle of Skye. Shucksmith finds that taken together with the devaluation of sterling, CAP reform was found, in the main, to have led to increased net farm incomes, but to have consequently increased crofters' dependence on subsidies (this dependency was also found to be the case in Grampian, as shown in Chapter 4). Another three main studies (Copus, 1995b; 1995c; and 1997), although examining different aspects of reform effects on Scotland as a whole, do focus on the individual Scottish regions, making comparisons between all 12. Therefore, in attempting to review previous research aimed specifically at examining the effects of CAP reform on

Grampian Region, it became clear that such research was weak with few studies having attempted to address this issue. Although one (unpublished) postgraduate dissertation examined the impact of the reforms on three farm types in north-east Scotland (Whiting, 1992), it was found that the main published material relating to CAP reform and its impact on Grampian is contained in reports by Copus (1995c) and Copus *et al.* (1997). Taken together, these reports examine changes in Grampian agriculture over the period examined in this research, and contain regional and district data on agricultural land use as well as data on agricultural output volumes and values. The data they present on agricultural land use is from the Scottish Office agricultural censuses, which were also widely used for the purposes of this research project (SOAEFD, 1995a; SOAFD, 1994a; 1993a; 1992a; 1991). However, whilst a large volume of data is comprehensively presented in these reports, the discussion on each sector is brief with no real in-depth analysis on changes that have occurred. These reports were published some time after this research project was initiated and whilst the discussion on changes provided some new insights on which to draw conclusions on the reforms and their possible impact on the region, it remained clear that this is an under researched area deserving significantly more academic attention than previously received.

Furthermore, in addition to the above, little attention has been directed at the effects of the reforms upon agriculture-related industries at a regional level and, similarly, at levels of diversification in the region (examined in Chapters 7 and 8, respectively). There is virtually no published secondary data on agriculture-related industries at a regional level. Some sources, such as regional employment figures, provide evidence of a limited kind, but cannot be used for reasons of commercial confidentiality. Although a little regional data was available for some agriculture-related industries (such as *Agra Europe*, 1992; Dean, 1992; Fidgett, 1994; Williams, 1994; Scott and Winstanley, 1997), it was clear that information would have to be collected by means of primary techniques. The methods used to collect primary data on this subject and the difficulties encountered in doing so are highlighted in Chapter 7. In the same way, very little data exists on levels of farm diversification in any particular region. The few to have been conducted on Scottish regions include Dalton (1995) who examines alternative farm enterprises in the Scottish Highlands and Tweed *et al.* (1994), who examine diversification and farming in Fife. Some studies have examined diversification in Scotland as a whole⁴ such as Dalton and Wilson (1989), Davies and Dalton (1993a), Mitchell and Doyle (1993)

and Wilson (1990). However, there has been no research conducted on levels and causes of diversification in Grampian Region. One reason for this is probably because no official statistics exist on the extent of farm diversification and any data that does exist is deemed to be of a confidential nature and is therefore unavailable. The main survey conducted for this research project included an examination of diversification in Grampian and it would appear that this is the only evidence available on diversification levels. This primary data is presented and discussed in Chapter 8.

This study therefore provides a contribution to investigating the effects of CAP reform on agriculture, on agriculture-related industries and on diversification levels, largely unresearched and unassessed at a regional level. This suggests a need for more detailed research into these areas at a regional level.

3.4 The MacSharry Reforms in Grampian

Having provided a general description of Grampian Region, the remainder of the chapter now goes on to establish the extent of changes to Grampian agriculture since the implementation of the CAP reforms. Chapter 2 examined in detail the MacSharry CAP reforms announced in May 1992 which effectively limited the volumes of production of cereals, oilseeds and protein crops (henceforth abbreviated as COPs), beef and sheep on which subsidies would be paid. To avoid repetition, the main reforms relating to this research are summarised in Table 3.4⁵.

Winter (1998, p. 133) suggests:

It is probably fair to say that the key features of the MacSharry reforms are well known but the details so Byzantine in their complexity as to defy all but the most dedicated Euro-watchers. Therefore any summary is of necessity a simplification...

So here, where applicable, only a brief summary of the relevant reform measures will be given for each sector being examined in order to set the scene before proceeding to an analysis of changes that may have occurred as a result of such measures. However, it must be noted and taken into account that change cannot be attributed solely to CAP reform as other intervening variables also have a part to play. For example, as noted above, adverse weather conditions can badly affect agriculture, in particular the arable sectors.

Table 3.4 Key changes affecting Grampian agriculture under the 1992 CAP reforms

Sector	Changes
Arable	Support prices reduced by 29%. Introduction of compulsory set-aside of 15% of COPs area on a rotational basis. Introduction of compensation payments to mitigate the effects of lower prices and set-aside.
Beef	Support prices reduced by 15%. Intervention levels to be cut from 750,000 tonnes to 350,000 tonnes over the period 1993-96. Lower quantity ceiling set. Approximate doubling of BSP and SCP (subject to quantity limits).
Dairy	Dairy co-responsibility levy abolished. Butter intervention price cut by 2%. Introduction of a calf slaughter premium payable for male dairy breed calves withdrawn from production before 10 days old.
Sheep	Introduction of a ewe premium quota subject to headage limits.
Pigs and Poultry	Lower feed costs following reforms to cereal price support. Lower trading prices for pigmeat and poultry products.
Agri-Environmental Measures	Commission funding for positive environmental management to promote reduction of farm pollution, extensification of arable and livestock farming, environmental land use, upkeep of abandoned farmland etc.
Forestry	Commission aid scheme to promote: 1) afforestation as an alternative use of agricultural land; 2) the development of forestry activities on farm.

3.5 Agricultural Structure and Arable Use in Grampian

This section is split into two parts where Part A firstly examines any changes to Grampian's agricultural structure, that is area, land use, land tenure, and number and size of holdings, that have occurred between 1991-95. Part B then examines the main uses of agricultural land which have been affected by the reforms, that is cereals, oilseed rape, set-aside and farm woodlands.

A. AGRICULTURAL STRUCTURE

3.5.1 Agricultural Area

The total agricultural area of Grampian rose slightly each year over the period 1991-95 and in 1995 remained at just under 639,000 ha (Table 3.5). Grampian Region accounted for 11% of the total Scottish agricultural area in 1995, a drop of over 1% from the previous two years.

Table 3.5 Total agricultural area in Grampian and Scotland, 1991-95

Year	Grampian (ha)	Scotland (ha)	Grampian as a % of Scotland
1991	621,374	5,269,574	11.8
1992	629,102	5,297,015	11.9
1993	636,421	5,273,934	12.1
1994	637,468	5,258,559	12.1
1995	638,929	5,836,324	11.0

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

3.5.2 Land Use

Table 3.6 below shows how Grampian's agricultural land was put to use over the period 1991-95. In 1992 cereals were sown on 137,040 ha but this had fallen to 118,327 ha in 1994, a decrease of almost 15%. This reduction in the area planted with cereals was a consequence of the introduction of compulsory set-aside of arable land for larger farmers (see Section 3.5.6). This scheme led to a large increase in the area of land set-aside, rising from 10,314 ha in 1992 to a peak of 31,990 ha in 1994 (a rise of 209%). By 1995 the set-aside requirement had reduced and consequently the amount of land set-aside decreased (by 15% to 27,220 ha) and the cereals area increased (by 12% to 132,829 ha).

Table 3.6 Land use in Grampian Region, 1991-95

Land Use	Area (ha)				
	1991	1992	1993	1994	1995
Cereals	139,013	137,040	124,726	118,327	132,829
Oilseed Rape	16,756	20,844	22,961	27,679	19,390
Potatoes	5,621	6,042	5,989	5,820	6,349
Fodder Crops	11,024	10,869	10,063	9,547	9,311
Field Vegetables	1,707	1,612	1,567	1,665	1,999
Soft and Orchard Fruits	182	152	156	139	129
Improved Grass	196,186	198,781	192,947	192,870	192,197
Rough Grazing	221,091	219,780	220,611	222,693	216,487
Set-Aside	10,314	12,274	32,387	31,990	27,220
Woodlands	10,715	10,700	14,495	16,185	16,895
Other	8,765	11,012	10,523	10,554	16,123
Total Agricultural Area	621,374	629,102	636,421	637,468	638,929

Note: Columns may not sum due to rounding of figures.

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

The Oilseed Rape crop increased by almost 33% between 1992 and 1994 when it peaked at 27,679 ha sown. This rise in oilseed rape production was undoubtedly due mainly to the high area payments per hectare as a result of the reformed arable regime (see Section 3.5.7 below). The woodlands area also increased significantly over this period from 10,715 ha to 16,895 ha, a rise of 58%. As discussed in Section 3.5.8 below it seems highly likely that such increases were as a result of the

financial assistance made available following CAP reform to encourage new woodlands on farmland through the Farm Woodland Premium Scheme (FWPS) and the Woodland Grant Scheme (WGS).

Table 3.7 below shows how each land use category accounted for a percentage of the total agricultural area in Grampian between 1991-95. The largest percentage of land in the Region was taken up as rough grazing, improved grass and cereals (34%, 30% and 21% respectively in 1995).

Table 3.7 Land use in Grampian Region as a percentage of total area, 1991-95

Land Use	Percentage of Total Area				
	1991	1992	1993	1994	1995
Cereals	22.4	21.8	19.6	18.6	20.8
Oilseed Rape	2.7	3.3	3.6	4.3	3.1
Potatoes	0.9	1.0	0.9	0.9	1.0
Fodder Crops	1.8	1.7	1.6	1.5	1.5
Field Vegetables	0.3	0.3	0.3	0.3	0.3
Soft and Orchard Fruits	0.0	0.0	0.0	0.0	0.0
Improved Grass	31.6	31.6	30.3	30.3	30.1
Rough Grazing	35.6	34.9	34.7	34.9	33.9
Set-Aside	1.7	2.0	5.1	5.0	4.3
Woodlands	1.7	1.7	2.3	2.5	2.6
Other	1.4	1.8	1.6	1.7	2.5
Total	100	100	100	100	100

Note: Columns may not sum due to rounding of figures.

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

In order to demonstrate the importance of Grampian to Scotland in terms of agricultural land use, Table 3.8 shows how each land use category accounted for a percentage of the Scottish total between 1991-95. The data shows without a doubt that Grampian agriculture is of national importance. On average, cereals, oilseed rape, fodder crops and set-aside accounted for around one-third of the Scottish total.

Table 3.8 Land use in Grampian as a percentage of Scotland, 1991-95

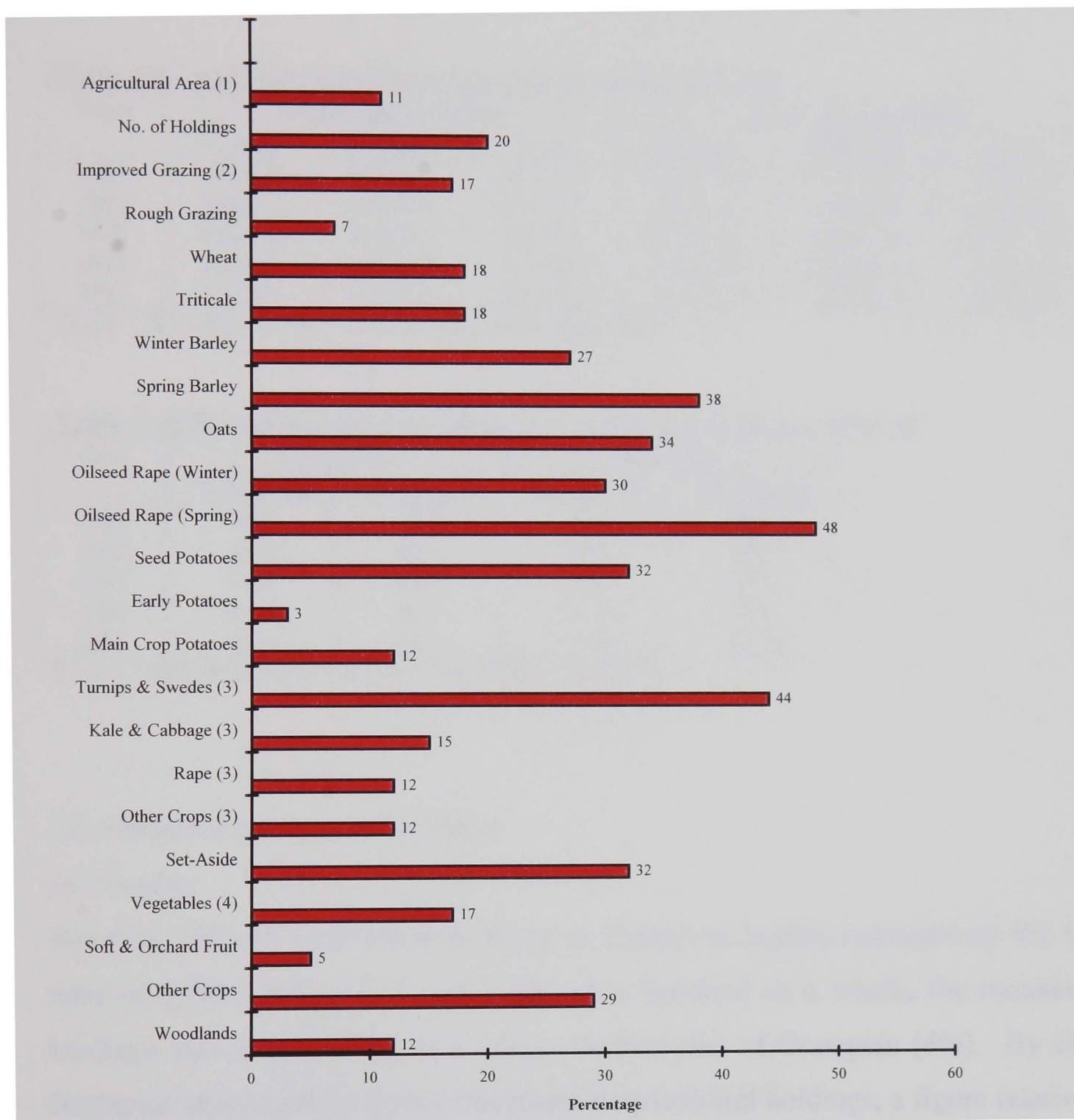
Land Use	1991	1992	1993	1994	1995	Average 1991-95
Cereals	29.7	34.3	34.4	33.8	31.2	32.7
Oilseed Rape	33.6	36.7	38.3	39.8	37.2	35.9
Potatoes	21.3	21.7	22.5	22.0	22.4	22.0
Fodder Crops	32.0	33.0	34.4	34.6	33.0	33.4
Field Vegetables	14.9	14.4	15.7	15.1	17.4	15.5
Soft and Orchard Fruits	6.1	6.1	6.4	5.8	5.4	6.0
Improved Grass	18.1	18.2	17.7	17.3	17.3	17.7
Rough Grazing	6.5	6.4	6.5	6.7	6.6	6.5
Set-Aside	36.5	33.5	33.2	32.3	31.6	33.4
Woodlands	11.5	10.7	12.5	12.5	12.0	11.8

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

Grampian also accounted for 22% of Scottish potatoes and nearly 16% of field vegetables, while up to 12% of Scotland's farm woodlands were in Grampian.

Figure 3.3 further illustrates the national importance of Grampian's agricultural structure. Included in the figures are those for agricultural area and agricultural holdings while the different cereals are shown separately, as are the fodder crops. At a glance it is clear that as it stood in 1995 Grampian's agricultural structure was of great importance to Scotland as a whole.

Figure 3.3 Grampian's agricultural structure as a percentage of Scotland, 1995



Notes: Figures rounded to the nearest percentage
 (1) Breakdown of crops and fallow, crops and grass, rough grazings, woodlands, roads, yards and buildings.
 (2) Total grass for mowing and total grass for grazing
 (3) Arable crops for stockfeeding
 (4) Vegetables for human consumption

Source: Derived from SOAEFD (1995a)

3.5.3 Land Tenure

While the area of owner occupied farmland in Grampian and in Scotland as a whole increased steadily between 1991-92, a subsequent decrease in tenanted land took place (Tables 3.9 and 3.10). In 1995 two-thirds of Grampian's farmland was owner occupied leaving the remaining one-third as rented area (Table 3.10). This percentage of owner occupation is higher in Grampian than in Scotland as a whole where, in comparison, just under 63% of farmland was owner occupied in 1995.

Table 3.9 Land tenure in Grampian and Scotland, 1991-95

Year	Grampian Area (ha)			Scotland Area (ha)		
	Rented	Owned	Total	Rented	Owned	Total
1991	235,010	386,365	621,374	2,091,756	3,177,818	5,269,574
1992	228,952	400,150	629,102	2,092,512	3,204,503	5,297,015
1993	222,168	414,253	636,421	2,023,132	3,250,978	5,274,110
1994	216,260	421,208	637,468	1,986,003	3,272,556	5,258,559
1995	211,103	422,004	633,107	1,954,637	3,297,958	5,252,595

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

Table 3.10 Percentage land tenure in Grampian and Scotland, 1991-95

Year	Grampian		Scotland	
	% Rented	% Owned	% Rented	% Owned
1991	37.8	62.2	39.7	60.3
1992	36.4	63.6	39.5	60.5
1993	34.9	65.1	38.4	61.6
1994	33.9	66.1	37.8	62.2
1995	33.3	66.7	37.2	62.8

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

3.5.4 Number and Size of Holdings

(a) Number

Between 1991-95 agricultural holdings in Grampian Region increased by 8% to a total of 6,703 (Tables 3.11 and 3.12). For Scotland as a whole, the number of holdings also increased but at a lower rate than that of Grampian (6%). By 1995 Grampian accounted for 20% of Scotland's agricultural holdings, a figure relatively unchanged since 1992.

Table 3.11 Number of holdings in Grampian and Scotland, 1991-95

Year	No of Holdings - Grampian	No of Holdings - Scotland	Grampian as a % of Scotland
1991	6,185	30,902	20.0
1992	6,399	31,577	20.3
1993	6,520	32,092	20.3
1994	6,648	32,513	20.4
1995	6,703	32,796	20.4

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

Table 3.12 Change in the number of holdings in Grampian and Scotland, 1991-95

Period	Grampian	Scotland
% Change 1991-92	3.4	2.2
% Change 1992-93	1.9	1.6
% Change 1993-94	1.9	1.3
% Change 1994-95	0.8	0.9
% Change 1991-95	8.4	6.1

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

Copus (1995a) and Copus *et al* (1997) argue that this gradual increase in numbers of agricultural holdings can be explained by structural adjustments in the farm size distribution. For instance, in examining crops and grass size distribution of Grampian holdings, they show that whilst the numbers of medium sized holdings have decreased as a result of amalgamating to form larger holdings, the numbers of small farms (less than 30 hectares) have increased as professionals commuting to Aberdeen City or working from home form hobby farms.

(b) Size

Between 1991-94 the number of farms of less than 20 hectares, accounting for over one third of all farms in the Region (Table 3.13), have continued to increase (Table 3.14). In examining the distribution of larger farms, structural change occurred more expeditiously in Grampian than in Scotland as a whole. For example, in 1994, 18% of all Grampian holdings were made up of farms of more than 100 hectares compared to the overall average of 16% for Scotland as a whole. In looking at changes in numbers for these larger farms we find that between 1991-94, Grampian Region showed higher increases than Scotland as a whole: the number of holdings between 100-200 hectares increased by over 1.6% and 1.2% respectively, while the number of holdings over 200 hectares increased by over 8% and 5% respectively.

Table 3.13 Size of holdings in Grampian and Scotland, 1994

Size of Holding (ha)	Per Cent of Holdings	
	Grampian	Scotland
>5	17.85	24.43
5-10	7.82	8.65
10-20	10.15	10.25
20-30	9.36	7.79
30-50	14.46	12.18
50-100	22.28	19.62
100-200	13.66	12.82
>200	4.42	4.26
Total	100.00	100.00

Source: Copus (1995a)

Table 3.14 Change in size of holdings in Grampian and Scotland, 1991-94

Size of Holding (ha)	Per Cent of Holdings	
	Grampian	Scotland
>5	51.79	16.47
5-10	28.08	13.02
10-20	1.05	2.74
20-30	-5.18	0.48
30-50	-3.90	-1.98
50-100	-1.73	0.47
100-200	1.57	1.17
>200	8.09	4.92

Source: Copus (1995a)

B. ARABLE USE

3.5.5 Cereals

The MacSharry reforms were directed mainly at the cereals sector, fundamentally changing the support arrangements. The objectives of the CAP reform package were to reduce cereal production in the EC by around 10% and to reduce the overall cost of supporting arable products. This was to be achieved by reducing the target price for cereals by 29% over the three crop years 1993/4-95/6. Compensatory arable aid payments would be made direct to farmers, eligibility for which would be conditional upon participation in the new system of compulsory set-aside for cereal producers, with the percentage initially set at 15% (with exceptions to this for small farmers). The set-aside scheme is discussed in detail in Section 3.5.6 below.

Table 3.15 below shows the different cereal crops sown in Grampian in 1995 and shows the area sown as a percentage of the Scottish total. Grampian clearly accounted for a large proportion of Scotland's total cereals area in 1995: 18% of wheat crops; 38% of Spring barley and 27% of Winter barley; 34% of oats; 18% of triticale; and 7% of mixed grain for threshing. In total, Grampian's cereals accounted for over 31% of Scotland's total cereals in 1995 (Table 3.16), having dropped slightly from the previous few years.

Table 3.15 Cereals area sown in Grampian and Scotland, 1995

Cereal Type	Area Sown (ha)		Grampian as a % of Scotland
	Grampian	Scotland	
Wheat	19,803	108,379	18
Spring barley	88,485	231,934	38
Winter Barley	15,815	57,993	27
Oats	8,454	25,179	34
Triticale	227	1,232	18
Mixed Grain for Threshing	43	595	7

Source: SOAEFD (1995a)

Table 3.16 Total cereals area sown in Grampian and Scotland, 1991-95

Year	Area Sown (ha) – Grampian	Area Sown (ha) – Scotland	Grampian as a % of Scotland
1991	139,013	467,471	29.7
1992	137,040	399,161	34.3
1993	124,726	362,040	34.4
1994	118,327	349,638	33.8
1995	132,829	425,312	31.2

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

The percentage change in cereals area sown over the period 1991-95 is shown in Table 3.17 below. It shows how the total cereals area in the region rose by nearly 11% between 1994-95. There is clearly a marked difference between this period and that of 1993-94 when the cereals area of the region contracted by 5%, and even more so between 1992-93 when a decrease of 9% took place, the greatest reductions having been in winter cereals. Copus (1995a) suggests a number of explanations for these reductions. Firstly, he argues that the reductions over the period 1992-93 are mainly as a result of the introduction of rotational set-aside. He then gives two explanations for the reductions that took place over 1993-94. Firstly, he suggests that farmers had come to realise that the reformed arable regime which was expected to bring lower prices favoured spring sown crops (especially spring oilseed rape) because of their lower variable costs over winter sown cereals. Secondly, he suggests that intervening variables i.e. the very poor weather in the autumn of 1993, also contributed to the reductions in winter-sown cereals for the period 1993-94.

Table 3.17 Change in total cereals area sown in Grampian and Scotland, 1991-95

Period	Grampian	Scotland
% Change 1991-92	-1.4	-14.6
% Change 1992-93	-9.0	-9.3
% Change 1993-94	-5.1	-3.4
% Change 1994-95	10.9	17.8
% Change 1991-95	-4.4	-9.0

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

3.5.6 Set-Aside

Prior to the set-aside regulations introduced by the 1992 CAP reforms, a voluntary five-year set-aside scheme had been operating in the UK by MAFF since September 1988⁶. Farmers could choose whether or not to take advantage of set-aside schemes on the basis of the incentives offered. This scheme required that at least 20% of the arable land must be taken out of agricultural production for a period of five years and could only be used for three purposes: fallow, non-agricultural use and woodlands. The MacSharry reforms then introduced a compulsory set-aside system for all arable land, that is COPs plus land previously set-aside⁷. The set-aside percentage was initially set at 15%, but was subsequently reduced to 12%⁸ and then 10% (and further reduced to 5% for the 1996-97 crop year). In return farmers would receive compensation through direct income payments. Only 'large' farmers must set-aside land: small-scale producers not producing more than 92 tonnes of cereals per annum (equivalent to approximately 20 hectares at the Community average yield) were exempt from set-aside. The main objectives of the set-aside scheme were to reduce production and price support costs, to stabilise and maintain farmers' incomes, and to provide environmental benefits⁹. The scheme prohibited the input of most fertilisers and herbicides and all fungicides and insecticides and set-aside land had to be kept in good agricultural condition. Food crops must not be produced on set-aside land but the regulations do allow the growing of non-food crops¹⁰.

Eligible producers were entitled to claim compensatory payments under the Arable Area Payment's Scheme (AAPS) which required the submission of detailed farm maps and supporting information under the Integrated Administration and Control System (IACS)¹¹. The IACS forms were long and complicated and had to be submitted by a deadline date (the first of these was by May 15, 1993). They were dreaded by most (see Hankey, 1993) and terms like "Doomsday" forms (Richardson, 1993) and "Mad Form Disease" (Blackbeard, 1994) became common. Farmers who did not participate in the set-aside scheme were denying themselves the right to compensation to commodity prices that would be 30% lower by 1995. It was believed that many farmers who did not return their forms did not realise what was at stake¹². Richardson (1993) talks of a 150-acre farmer who did not fill in his IACS forms "on principle". He lost an estimated £6,000 worth of EU subsidies in 1993.

Buckwell (1992) estimates the total set-aside area in the UK following CAP reform, based on the area of COPs in 1989 (Table 3.18). If all farmers were to choose this option and fully implement their obligations, the UK would have a set-aside area of around 630,000 ha. Set-aside would thus rank as the third largest crop after wheat and barley. Such estimates turned out to be very accurate. Winter (1998) shows that the total set-aside area in the UK was 571,481 ha in 1992/93, reaching a peak of 653,034 ha in 1993/94 and then falling to 595,436 ha following the reduction in the set-aside rate for 1994/95. It was estimated that in Scotland set-aside would lead to approximately an 8-10% reduction in cropping area (Walker, 1993). With Scotland growing over half a million ha of COPs, this meant the arable cropping would be reduced by up to 50,000 ha. In actual fact, the total set-aside area in Scotland was 90,153 ha in 1993, rising to 93,162 ha in 1994 and dropping to 80,424 ha in 1995 (SOAEFD, 1995a; SOAFD, 1994a, 1993a).

Table 3.18 Maximum potential set-aside area in the UK and EC-12

	Total Eligible Area COPs	Percentage Liable to Set- aside	Area Liable to Set-aside	Set-aside Area	Percentage of Set-aside
	'000 ha	%	'000 ha	'000 ha	%
United Kingdom	4,432	94.5	4,190	629	16.8
EC-12	41,635	59.7	24,869	3,730	100.0

Source: Buckwell (1992)

The area set-aside in Grampian between 1992-95 (set-aside breakdown for 1991 was not available) is shown in Table 3.19 below. Following the massive increase of nearly 66% in the area set-aside between 1992-93 (from 10,527 ha to 30,905 ha), the total area of set-aside in Grampian declined very slightly between 1993-94 (-0.4%) and then went on to decline significantly between 1994-95 with a fall of almost 16% (Tables 3.19 and 3.20). Similar changes took place for Scotland as a whole over this period. As a percentage of Scotland, Table 3.19 shows how Grampian accounted for nearly 37% of Scotland's set-aside area in 1992 but only accounted for a little over 32% in 1995. Such reductions in set-aside area, both regionally and nationally, are a reflection of the changes in the Arable Payment set-aside rate as discussed above.

Table 3.19 Set-aside in Grampian and Scotland, 1992-95

Year	Area (ha) – Grampian	Area (ha) - Scotland	Grampian as a % of Scotland
1992	10,527	28,782	36.6
1993	30,905	90,153	34.3
1994	30,788	93,162	33.1
1995	25,996	80,424	32.3

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a

Table 3.20 Change in set-aside in Grampian and Scotland, 1992-95

Period	Grampian	Scotland
% Change 1992-93	65.9	68.1
% Change 1993-94	-0.4	3.2
% Change 1994-95	-15.9	-13.7

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a

3.5.7 Oilseed Rape

The oilseeds sector was reformed in 1991¹³ and so the CAP reforms did not alter the new regime introduced for the 1992 harvest year except to include oilseeds in the base area used to calculate the 15% set-aside. Area payments were to be similar but larger than those for cereals, and would be available on the condition that producers cross-complied with arable set-aside.

As noted by GRC (1992) oilseed rape in the early 1990s “provided the most significant and ... controversial change in Grampian’s farming landscape” (p.iii). From growing no oilseed rape in 1982, Grampian saw the area sown with this crop grow rapidly from 6,150 ha in 1986 to a peak of 27,679 ha in 1994 (accounting for 40% of the Scottish total). Indeed, over the period 1991-95 Grampian dominated Scotland’s oilseed rape production. This is shown clearly in Figure 3.3 above where it is seen that in 1995 winter oilseed rape accounted for 30% of the Scottish total while spring oilseed rape accounted for 48% of the Scottish total. For total oilseed rape production, Tables 3.21 and 3.22 below show how production in both Grampian and Scotland rose between 1992-93 (by 9.2% and 5.1% respectively), rising ever further between 1993-94 (by 17.0% and 13.9% respectively). Although oilseed rape yields are higher in Scotland than in any other part of the EU due to higher solar radiation and superior rainfall distribution (GRC, 1995), such expansion in oilseed rape production in Grampian during the period up to 1994 was undoubtedly due to the high area payments per hectare under the reformed arable regime. However, these rises were followed by a dramatic fall of almost 30% in production between 1994-95 (Table 3.22). Overall production in Scotland also fell

dramatically but by slightly less at just over 25%. It seems highly likely that such dramatic decreases were due to enticing malting barley prices resulting in spring oilseed rape being replaced by spring barley (Copus *et al*, 1997). If barley prices dropped again, it would be expected that growers would go back to rape planting.

Table 3.21 Oilseed rape production in Grampian and Scotland, 1991-95

Year	Area Sown (ha) - Grampian	Area Sown (ha) - Scotland	Grampian as a % of Scotland
1991	16,756	49,895	33.6
1992	20,844	56,859	36.7
1993	22,961	59,925	38.3
1994	27,679	69,619	39.8
1995	19,390	52,122	37.2

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

Table 3.22 Change in oilseed rape production in Grampian and Scotland, 1991-95

Period	Grampian	Scotland
% Change 1991-92	24.4	14.0
% Change 1992-93	9.2	5.1
% Change 1993-94	17.0	13.9
% Change 1994-95	-29.9	-25.1
% Change 1991-95	15.7	4.5

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

3.5.8 Woodlands

The EU does not have a common forestry policy but it does have many relevant forestry measures in place for this sector as forestry is the main alternative to agriculture for land use in rural areas. In 1995 forestry, totalling an area of over 48 million hectares, accounted for around 20% of the total land area of the EU¹⁴ (Psaltopolous and Thomson, 1995). Following CAP reform in 1992, financial assistance towards the creation of new woodlands and forests on agricultural land became available (Regulation 2080/92). FEOGA contributions would be up to ECU 3,000 per ha for softwoods, ECU 4,000 per ha for broadleaves, and ECU 600 per ha for five years to offset loss of farming income (CEC, 1994). EC aid to UK forestry was around £8 million in 1993-94 (HMSO, 1994). Forestry is also affected by other CAP reform measures, in particular set-aside where from June 1995 forestry (short rotation crops) can be an alternative use of agricultural land.

In the UK, the Farm Woodland Premium Scheme (FWPS)¹⁵ falls under the auspices of the CAP. This is a voluntary scheme that offers annual payments in return for converting agricultural land to woodland. Applications to the FWPS

must already have been authorised for the Woodland Grant Scheme (WGS)¹⁶, and eligibility is dependent on satisfying a number of requirements (Crabtree *et al*, 1997). Following CAP reform and its adjustment pressures, such a scheme provided incentives for farmers to diversify their income. Forestry is particularly attractive in areas of low agricultural productivity which is often in upland areas. Uptake of the scheme, especially by those farmers facing income problems, would contribute to the wider income support objectives of the CAP. Furthermore, forestry also offers local employment during planting and harvesting operations. Indeed, Psaltopolous and Thomson (1995) stress the importance of the forestry industry from an economic perspective¹⁷:

... it provides raw material to important downstream sectors as well as upstream direct and contract labour often located in areas where alternative employment would be hard to provide (p. 31)

However, as Crabtree *et al* (1997) and Crabtree (1995) point out, as a form of diversification timber production through the FWPS does not offer an immediate solution to farmers under financial pressure from agricultural policy reform. Timber production involves long-term investment and uneven cash flows, which means it has limited attraction as an alternative crop. This explains why forestry is confined mainly to poor agricultural land.

Table 3.23 Woodlands area in Grampian and Scotland, 1991-95

Year	Area (ha) - Grampian	Area (ha) - Scotland	Grampian as a % of Scotland
1991	10,715	93,313	11.5
1992	10,700	99,821	10.7
1993	14,495	115,777	12.5
1994	16,185	129,581	12.5
1995	16,895	140,410	12.0

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

In 1995 woodland accounted for 18% of Grampian's land area, covering about 160,000 ha (Clark, 1995). Of this total, farm woodland accounted for around 10% (16,895 ha as shown in Table 3.23). Farm woodland area increased by nearly 58% between 1991-95, increasing from 10,715 ha in 1992 to 16,895 ha in 1995 (Tables 3.23 and 3.24). Over the same period, Scotland as a whole saw the farm woodland area increase by over 50%. Grampian's woodland area accounted for 12% of the Scottish total in 1995, no real change from the previous two years but an increase from 1992 (Table 3.23). Such increases in farm woodland were most likely

attributable to the success of the FWPS and the WGS. In particular, the FWPS had coincided with a period of depressed farm incomes and land prices (Clark, 1995).

Table 3.24 Change in woodlands area in Grampian and Scotland, 1991-95

Period	Grampian	Scotland
% Change 1991-92	-0.1	7.0
% Change 1992-93	26.2	13.8
% Change 1993-94	10.4	10.7
% Change 1994-95	4.2	7.7
% Change 1991-95	57.7	50.5

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

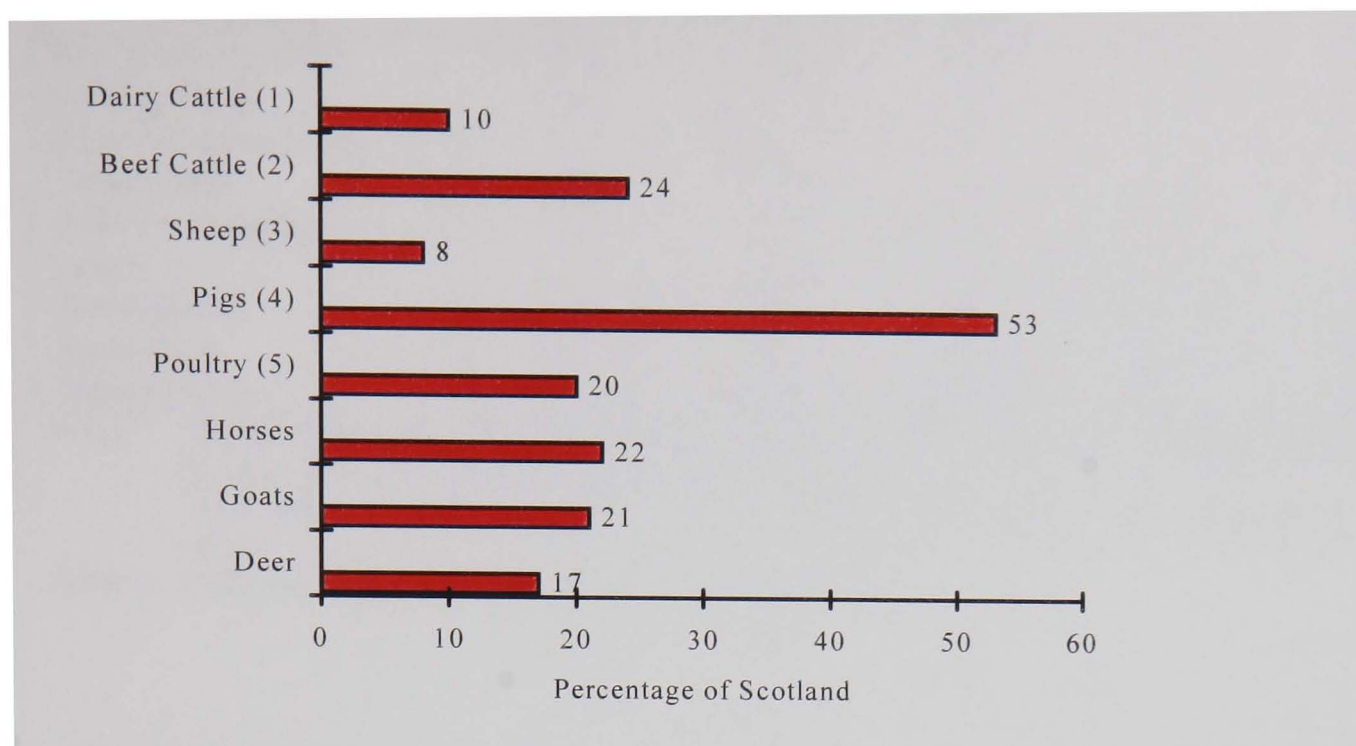
3.6 Livestock in Grampian

3.6.1 Numbers and Type

Before examining the effects of the CAP reforms on livestock farming in Grampian (see Table 3.4 above for a summary of the key changes), it is necessary first to define and examine the main types of livestock in the region. This section therefore looks at livestock numbers in Grampian and examines the importance of livestock farming in Grampian to Scotland over the period 1991-95. Figure 3.4 below shows how Grampian livestock stood in relation to Scotland as a whole in 1995. Included are figures for horses, goats and deer but these types of livestock will not be examined any further as numbers are low overall and as yet, they do not play a large part in farming in the country.

As shown in Figure 3.4 (and Tables 3.25 and 3.26 below), Grampian in 1995 had 10% of Scotland's dairy cattle, accounted for 24% of its beef cattle and 8% of its sheep flock. Pigs are particularly prevalent in Grampian, accounting for over 53% of the Scottish total in 1995. Grampian also accounted for almost a fifth of Scotland's poultry in 1995. Over the period 1991-95, numbers remained relatively stable for cattle, pigs and poultry, but the sheep flock declined steadily.

Figure 3.4 Grampian livestock as a percentage of Scotland, 1995



- Notes: Figures are rounded to the nearest percentage
- (1) Figures for dairy cattle are comprised of totals for cows and heifers in milk, cows in calf but not in milk and heifers in calf
 - (2) Figures for beef cattle are comprised of totals for the beef breeding herd plus feeding cattle
 - (3) Figures for sheep are comprised of totals for ewes for breeding, rams for service, other sheep one year and over and other sheep under one year
 - (4) Figures for pigs are comprised of totals for breeding pigs, gilts 50kg and over not yet in pig but expected to be used for breeding, boars for service, barren sows for fattening and other pigs
 - (5) Figures for poultry are comprised of totals for fowls laying eggs for eating, fowls for breeding, broilers and other table birds and other poultry

Source: Derived from SOAEFD (1995a)

Table 3.25 Livestock numbers in Grampian, 1991-95

Livestock	1991	1992	1993	1994	1995
Beef Breeding Herd	112,906	117,560	120,359	120,619	121,609
Feeding Cattle	146,993	150,363	136,070	137,244	128,203
Dairy Breeding Herd	33,331	32,823	32,444	32,773	32,635
Total Cattle¹	381,115	435,405	414,273	414,146	401,004
Ewes for Breeding	310,633	314,874	311,920	300,104	284,587
Lambs	438,087	444,712	444,679	416,781	395,153
Total Sheep²	824,174	831,997	821,379	784,311	742,919
Total Pigs	271,933	288,354	299,052	282,875	295,250
Total Poultry	2,337,707	2,755,929	2,505,147	2,726,487	2,911,964

Note: ¹Total Cattle = Beef Breeding Herd + Feeding Cattle + Dairy Breeding Herd + [Total Bulls for Service + Dairy and Beef Cattle under one year old].

²Total Sheep = Ewes for Breeding + Lambs + [Rams for Service + Other Sheep one year old and over].

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

Table 3.26 Grampian livestock as a percentage of Scotland, 1991-95

Livestock	1991	1992	1993	1994	1995
Beef Breeding Herd	18.6	19.0	19.5	19.2	19.3
Feeding Cattle	32.0	32.4	31.5	31.1	29.7
Dairy Breeding Herd	9.6	9.7	9.5	9.6	9.6
Total Cattle¹	20.4	20.7	20.1	19.9	19.5
Ewes for Breeding	8.0	8.1	8.1	7.9	7.6
Lambs	9.0	9.2	9.4	9.0	8.7
Total Sheep²	8.4	8.6	8.6	8.3	8.0
Total Pigs	55.2	56.7	56.0	52.0	53.3
Total Poultry	17.0	18.6	16.7	18.6	19.5

Note: ¹Total Cattle = Beef Breeding Herd + Feeding Cattle + Dairy Breeding Herd + [Total Bulls for Service + Dairy and Beef Cattle under one year old].

²Total Sheep = Ewes for Breeding + Lambs + [Rams for Service + Other Sheep one year old and over].

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

3.6.2 Dairy

The CAP reforms left the dairy sector relatively untouched, compared to other sectors (Ingersent *et al.*, 1998). The dairy quota regime was left virtually intact with no cuts for 1992/93 but a 1% cut for the next three years, compensated by a 4p/litre/year for 10 years. The dairy co-responsibility levy was to be abolished in 1993 and butter prices were to be cut by 2.5% in 1993/94 and 1994/95. The main implication of these changes was the removal of the threat of general pressure on dairy producers to diversify into cereal, beef or sheep. A calf slaughter scheme was also introduced paying £80 per male calf. This scheme would be attractive in the case of particularly poor quality calves.

As shown in Table 3.27, Grampian's dairy sector accounted for almost 10% of the Scottish total in 1995, remaining relatively unchanged from 1992. In Grampian, the dairy herd decreased by almost 2% in 1992-93 followed by a rise of 1% between 1993-94 (Table 3.28). This is in line with the rest of the UK where a marginal increase in dairy cow numbers occurred in 1994. The Farm Animal Welfare Council (FAWC, 1997) suggest that such an increase was partly as a result of European imports (mainly from Holland) and also because of an increase in home-bred heifers. This was stimulated by good levels of profitability and the anticipated increase in milk price due to the forthcoming de-regulation in the milk market. With average milk yields per cow increasing (from 4,940 litres in the production year 1983/84 to 5,395 litres in 1995), and with milk quota limits on national milk output, the natural consequence is a further reduction in herd numbers. Between 1994-95 Grampian's dairy numbers fell again but at a lesser rate of under 1% (in comparison Scotland as a whole saw increases of over 4%).

Changes in Grampian are in line with findings by Meyers *et al.* (1998) who found that overall, only relatively small changes in production took place in the EU dairy sector.

Table 3.27 Dairy herd in Grampian and Scotland, 1991-95

Year	Dairy Herd - Grampian	Dairy Herd - Scotland	Grampian as a % of Scotland
1991	33,331	347,685	9.6
1992	32,823	339,700	9.7
1993	32,444	340,360	9.5
1994	32,773	324,468	9.6
1995	32,635	339,331	9.6

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

Table 3.28 Change in dairy herd in Grampian and Scotland, 1991-95

Period	Grampian	Scotland
% Change 1991-92	-1.5	-2.3
% Change 1992-93	-1.6	0.2
% Change 1993-94	1.0	-0.6
% Change 1994-95	-0.4	4.4
% Change 1991-95	-2.1	-2.4

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

3.6.3 Beef

CAP reform dramatically affected the beef support system through a number of key measures. The support price was cut by 15% over three years from 1993. Intervention levels were to be reduced from 750,000 tonnes in 1993 to 350,000 tonnes in 1997 (with a safety net intervention to apply when market prices fell below 60% (previously 72%) of intervention price). To compensate for such price cuts, cattle headage rates (Suckler Cow Premium (SCP) and Beef Special Premium (BSP)) were approximately doubled but were subject to tighter qualifying restrictions: 1) total regional payments are restricted to the regional reference herd; 2) the BSP is paid only on the first 90 male animals (at 10 months and 22 months of age); 3) a condition of the scheme is a maximum stocking rate requirement (3.5 livestock units/ha in 1993 reducing to 2.0 livestock units/ha in 1996). Those producers with low stocking rates are eligible for an additional payment (or extensification premium). Additional Hill Livestock Compensatory Allowance payments (HLCAs) are payable within less favoured areas (LFAs). Taking all these measures into account, it is argued overall, that the beef CAP reforms were the most confusing for producers (Allen, 1993, p. 18):

Beef producers have been saddled with the most complicated CAP reform package of any sector of farming. They face lower intervention prices, restricted intervention purchases, farm and regional numbers limits on beef premiums, suckler cow quotas, stocking rate ceilings on premium payments which pull dairy cows and ewes into the calculation as well as beef cattle, and a new extensification premium.

As mentioned above, two categories of cattle qualify for beef headage payments: suckler cows and 'male bovine animals' (bulls and steers). Changes that have occurred in these herds in Grampian are now examined.

(a) Beef Breeding Herd

The beef breeding herd in Grampian saw an increase in numbers between 1992-93 (2.3%) and again in 1993-94, although at a lesser rate (0.2%). At the same time Scotland as a whole experienced a fall in numbers (-0.4%) followed by a substantial increase of 2% the following year (Table 3.30). Rises continued to take place between 1994-95 at both the regional and national level (0.8% and 0.2% respectively). The relative stability between 1993-95 is a reflection of the favourable impact of the SCP. Taking the beef breeding herd in Grampian as a percentage of Scotland, the situation has not really changed over the four year period examined, remaining at a little over 19% in 1995 (Table 3.29).

Table 3.29 Beef breeding herd in Grampian and Scotland, 1991-95

Year	Beef Breeding Herd -Grampian	Beef Breeding Herd - Scotland	Grampian as a % of Scotland
1991	112,906	608,526	18.6
1992	117,560	618,348	19.0
1993	120,359	616,060	19.5
1994	120,619	628,913	19.2
1995	121,609	629,916	19.3

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

Table 3.30 Change in beef breeding herd in Grampian and Scotland, 1991-95

Period	Grampian	Scotland
% Change 1991-92	4.1	1.6
% Change 1992-93	2.3	-0.4
% Change 1993-94	0.2	2.1
% Change 1994-95	0.8	0.2
% Change 1991-95	7.7	3.5

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

(b) Feeding Cattle

Feeding cattle in both Grampian and Scotland decreased quite dramatically between 1992-93 (-9.5% and -6.8% respectively). However, between 1993-94 Grampian saw an increase of almost 1% whilst the Scottish total increased by over 2% (Table 3.32). It is likely that this increase in the feeding cattle herd is a consequence of the increase in the beef breeding herd which had taken place the previous year, the offspring of which would probably be kept so as to claim second instalments of BSP (Copus, 1995a). In the following period 1994-95 the Region saw quite a substantial reduction in its feeding cattle herd, decreasing by nearly 7% compared to a national decrease of over 2%. By 1995, Grampian's herd as a percentage of the Scottish total was almost 30%, having fallen from over 32% in 1992 (Table 3.31).

Table 3.31 Feeding cattle in Grampian and Scotland, 1991-95

Year	Feeding Cattle – Grampian	Feeding Cattle - Scotland	Grampian as a % of Scotland
1991	146,993	459,771	32.0
1992	150,363	463,540	32.4
1993	136,070	431,973	31.5
1994	137,244	441,740	31.1
1995	128,203	431,917	29.7

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

Table 3.32 Change in feeding cattle in Grampian and Scotland, 1991-95

Period	Grampian	Scotland
% Change 1991-95	2.3	0.8
% Change 1992-93	-9.5	-6.8
% Change 1993-94	0.9	2.3
% Change 1994-95	-6.6	-2.2
% Change 1991-95	-12.8	-6.1

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

3.6.4 Sheep

In the sheep sector, very modest changes occurred with CAP reform modifying the existing regime that had been reformed in 1991. A ewe premium quota was introduced with limits on headage payments (1,000 ewes in LFAs and 500 ewes on lowlands) via the Sheep Annual Premium Scheme (SAPS). Above these limits, the ewe premium was 50% of the full rate. The premium quota was now based on premiums paid in the 1991 marketing year. A producer may trade his ewe premium quota but 15% of all transfers must be surrendered to the national reserve (for the benefit of new entrants). It was hoped that the premium entitlement would be a

strengthening asset in particular to producers in the hills and uplands (Measures, 1992). However, the Meat and Livestock Commission (MLC) argued that the introduction of the individual producer flock limits would greatly reduce the incentive to expand production (MLC, 1992a). Furthermore, the new definition of eligible ewe could stop a large number of animals from getting the ewe premium¹⁸.

Initially it was expected that in the short term ewe numbers would remain static as producers assessed the effects of the CAP reforms on their business (MLC, 1992c). What did occur was an increase in the UK breeding flock as producers held onto ewes given the uncertainty over CAP reform (MLC, 1992b). As shown below, Grampian saw an increase in breeding ewes between 1991-92, with a rise of 1.4%, higher than that for Scotland as a whole which saw a rise of just 0.2% (Table 3.38). However, Grampian's sheep and lamb numbers then declined every year between 1992-95 (Tables 3.33 and 3.34). The Scottish total also declined but at a lesser rate than that of Grampian. Breeding ewes in Grampian fell by almost 1% between 1992-93. As reported by the MLC, many producers were being pushed out of production due to falling profitability, even in heavily supported hill areas (MLC, 1993). In 1994 breeding ewe numbers fell by almost 4% in Grampian, decreasing less in Scotland generally (-1.3%). This year was also the worst for the lamb crop, decreasing by over 6% in Grampian (almost 3% in Scotland as a whole). The main factors causing the decline in breeding ewe numbers were: the high level of ewe cullings; the removal of ewes from flocks where ewe premium half rights were converted to full rights; and the move to use premium to cover ewe lambs (MLC, 1994d). For the lamb crop, decreases were due to the combination of the reduced breeding flock and lower productivity, the cause of which was poorer condition of ewes due to a wet autumn and losses in cold, wet weather at lambing.

Table 3.33 Ewes for breeding in Grampian and Scotland, 1991-95

Year	Ewes for Breeding - Grampian	Ewes for Breeding - Scotland	Grampian as a % of Scotland
1991	310,633	3,863,878	8.0
1992	314,874	3,873,695	8.1
1993	311,920	3,853,270	8.1
1994	300,104	3,804,729	7.0
1995	284,587	3,727,568	7.6

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

In total, the period 1991-95 saw Grampian's sheep numbers decline by over 8% while lamb numbers fell by over 6%; in Scotland numbers declined by over 4% and

6%, respectively. As noted, such a fall in numbers was due to a variety of factors, some relating to CAP reform while others were unrelated such as bad weather at lambing.

Table 3.34 Lambs in Grampian and Scotland, 1991-95

Year	Lambs – Grampian	Lambs – Scotland	Grampian as a % of Scotland
1991	438,087	4,842,982	9.0
1992	444,712	4,819,869	9.2
1993	444,679	4,755,896	9.4
1994	416,781	4,628,904	9.0
1995	395,153	4,548,798	8.7

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

Table 3.35 Change in sheep in Grampian and Scotland, 1991-95

Period	Ewes for Breeding		Lambs	
	Grampian	Scotland	Grampian	Scotland
% Change 1991-92	1.4	0.2	1.5	-0.5
% Change 1992-93	-0.9	-0.5	0.0	-1.3
% Change 1993-94	-3.8	-1.3	-6.3	-2.7
% Change 1994-95	-5.2	-2.0	-5.2	-1.7
% Change 1991-95	-8.4	-3.5	-6.1	-6.1

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

3.6.5 Pigs

Pig farming was not the subject of CAP reform but the sector was affected in that it would benefit from changes to the cereals regime i.e. reduced feed costs. Because around half of the feed requirement for pigs (and poultry) comes from cereals (Ackrill *et al.*, 1998), pig producers would see large savings, likely ultimately to be passed on in lower pigmeat prices.

Table 3.36 shows the importance of Grampian to the Scottish pig industry, accounting for over 53% of the Scottish pig population in 1995. Although the Region's pig population had fallen by over 5% between 1993-94 (Copus (1995a) believes that this reduction was most likely due to a combination of blue ear disease¹⁹ and low pigmeat prices), an increase of over 4% took place between 1994-95 giving Grampian a total of nearly 300,000 pigs (Tables 3.36 and 3.37). Between 1993-94 the Region's share of the Scottish total fell from 56% to 52%, but rose again to over 53% in 1995.

Table 3.36 Pig population in Grampian and Scotland, 1991-95

Year	Pigs - Grampian	Pigs - Scotland	Grampian as a % of Scotland
1991	271,933	493,025	55.2
1992	288,354	508,605	56.7
1993	299,052	533,754	56.0
1994	282,875	543,555	52.0
1995	295,250	553,960	53.3

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

Table 3.37 Change in pig population in Grampian and Scotland, 1991-95

Period	Grampian	Scotland
% Change 1991-92	6.0	3.2
% Change 1992-93	3.6	4.7
% Change 1993-94	-5.4	1.8
% Change 1994-95	4.2	1.9
% Change 1991-95	8.6	12.4

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

3.6.6 Poultry

As with pig farming, the poultry sector was not directly affected by CAP reform, but would similarly benefit from lower feed costs. Lower trading prices for poultry products was expected.

In 1995 poultry in Grampian accounted for 20% of Scotland's population, a rise of 1% from the previous year (Table 3.38). Although production in Grampian fell by 9% in 1992-93, a rise of 9% took place between 1993-94, with a further rise of over 6% occurring in 1994-95 (Table 3.39). As seen in Table 3.38, these rises are substantially higher than those taking place in Scotland as a whole and in 1995 Grampian had a total poultry flock of over 2.9 million.

Table 3.38 Poultry in Grampian and Scotland, 1991-95

Year	Poultry - Grampian	Poultry - Scotland	Grampian as a % of Scotland
1991	2,337,707	13,730,247	17.0
1992	2,755,929	14,814,552	18.6
1993	2,505,147	14,999,101	16.7
1994	2,726,487	14,638,539	18.6
1995	2,911,964	14,952,919	19.5

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

Table 3.39 Change in poultry in Grampian and Scotland, 1991-95

Period	Grampian	Scotland
% Change 1991-92	17.9	7.9
% Change 1992-93	-9.1	1.2
% Change 1993-94	8.8	-2.4
% Change 1994-95	6.4	2.1
% Change 1991-95	24.6	8.9

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

3.7 Farm Labour in Grampian Region

This section begins with an examination of farm occupiers in Grampian, showing changes in full-time and part-time occupiers over the period 1991-95. The remainder of this section then focuses on the agricultural labour types on Grampian farms i.e. spouses, casual and seasonal labour, hired and family labour, and examines structural changes that have taken place over the period in question.

3.7.1 Occupiers

In the period 1980-91 Grampian Region experienced a high rate of growth (49%) in the proportion of farm occupiers who were part-time (Edmond *et al.*, 1993). In the year 1990-91 alone the percentage of part-time occupiers in the Region increased by 15% while full-time occupiers decreased by 11%. However, between 1991-93 this trend was reversed as part-time occupiers fell by nearly 9% (Table 3.42), perhaps reflecting a decline in off-farm employment opportunities during the recession (Copus, 1995a). Then between 1993-94, although the number of part-time occupiers in Grampian fell by 1%, the actual percentage of part-time occupiers rose to 41% while full-time occupiers fell to 59% (Tables 3.41 and 3.42). It is suggested that this growth in the part-time sector was perhaps a reflection of recovery in the regional economy (Copus, 1995a). Between 1994-95, the percentage of part-time occupiers rose again to almost 43%, while full-time occupiers fell to just over 57% (Table 3.41). By 1995 there were 2,532 full-time occupiers in the Region compared to 1,877 part-time occupiers (Table 3.40). Copus *et al.* (1997) suggest that this continued increase in part-time farming could have been due to off-farm employment opportunities within commuting distance.

If occupiers in Grampian are taken as a percentage of Scotland as a whole, it can be seen that Grampian accounted for nearly 19% of part-time occupiers in

Scotland in 1991, rising to 20% in 1995 (Table 3.41). For full-time occupiers, the percentage has fallen from under 22% in 1991 to almost 21% in 1995.

Table 3.40 Occupiers in Grampian, 1991-95

Year	Occupiers in Grampian			Occupiers in Scotland		
	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
1991	2,672	2,065	4,737	12,344	11,054	23,398
1992	2,760	1,909	4,669	12,652	10,187	22,839
1993	2,821	1,887	4,708	13,083	9,687	22,770
1994	2,690	1,868	4,558	12,549	9,841	22,390
1995	2,532	1,877	4,409	12,249	9,431	21,680

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

Table 3.41 Percentage of occupier type in Grampian, 1991-95

Year	Part-Time Occupiers		Full-Time Occupiers	
	%	Grampian as a % of Scotland	%	Grampian as a % of Scotland
1991	43.6	18.7	56.4	21.6
1992	40.9	18.7	59.1	21.8
1993	40.1	19.5	59.9	21.6
1994	41.0	19.0	59.0	21.4
1995	42.6	19.9	57.4	20.7

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

Table 3.42 Change in occupiers in Grampian and Scotland, 1991-95

Period	Occupiers in Grampian			Occupiers in Scotland		
	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
% Change 1991-92	3.3	-7.6	-1.4	2.5	-7.8	-2.4
% Change 1992-93	2.2	-1.2	0.8	3.3	-4.9	-0.3
% Change 1993-94	-4.6	-1.0	-3.2	-4.1	1.6	-1.7
% Change 1994-95	-5.9	0.5	-3.3	-2.3	-4.2	-3.2
% Change 1991-95	-5.2	-9.1	-6.9	-0.8	-14.7	-7.3

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a

Overall, the numbers of occupiers in Grampian and Scotland fell quite steadily between 1991-95. Fowler (1996) examined newcomers to farming in Scotland and found a marked decline from 1992. Research showed a 27% decline in new agricultural businesses between 1992-95 compared with the three years before that. From 1992-94 the level of new business registrations in agriculture, at 4% of the total, was markedly lower than in other industry sectors. Fowler (1996, p. 19) argues that: “[e]xcept for a small dedicated elite, the Scottish farming industry is likely to remain closed to newcomers for the foreseeable future...”. He argues that the main barrier is the high capital investment required to take up a farm tenancy which is clearly out of reach of the majority of new entrants. In 1993, Professor David Harvey of Newcastle University argued that:

There are too many people trying to earn a living on a full-time basis from farming. It's absolutely certain that in 10 years, the numbers will be greatly reduced and that those who are left will be operating on a larger scale. That is basic economics as we move to an era of less support and a freer international market (quoted in *Press and Journal*, 18/11/93).

Indeed as was seen above, this was already the case in Grampian by 1995. Numbers of occupiers had fallen by 7% between 1991-95 and as was seen in Section 3.3.4 above, the number of larger holdings (over 100 ha) had increased over the same period by almost 10% as a higher proportion of medium sized holdings were amalgamated to form larger holdings.

3.7.2 Agricultural Labour

Data for the various agricultural labour types on farms in Grampian and Scotland over the period 1991-95 are presented in Table 3.43 below. The yearly changes that have occurred for each labour type are recorded in Tables 3.44 and 3.45.

Agricultural employees in Grampian region, that is total labour excluding occupiers, rose from 6,855 in 1991 to 7,102 in 1995, a rise of almost 4%. Figure 3.5 below shows at a glance the status of labour type in Grampian in 1995. The majority of farm labour was made up of hired workers (39%) although spouses formed a large part of the workforce also (34%). Family labour accounted for 20% of the workforce while the remaining 7% were made up of casual and seasonal workers.

Table 3.43 Labour in Grampian and Scotland, 1991-95

Labour Type	Grampian		Scotland	
	Numbers	%	Numbers	%
1991				
Spouses	1,944	28.4	10,350	27.5
Casual and Seasonal Labour	447	7.0	2,779	7.4
Total Full-time Labour ¹	3,608	52.6	19,339	51.3
Total Part-time Labour ²	856	12.5	5,195	13.8
Total Hired Labour	2,903	42.3	15,898	42.2
Total Family Labour	1,561	22.8	8,636	22.9
Total Labour (excl. Occupiers) ³	6,855	100.0	37,663	100.0
Total Labour (incl. Occupiers) ⁴	11,592	100.0	61,061	100.0
1992				
Spouses	2,022	28.7	10,485	28.1
Casual and Seasonal Labour	484	6.9	2,882	7.7
Total Full-time Labour ¹	3,662	52.0	18,780	50.3
Total Part-time Labour ²	878	12.4	5,161	13.8
Total Hired Labour	2,978	42.3	15,282	41.0
Total Family Labour	1,562	22.2	8,659	23.2
Total Labour (excl. Occupiers) ³	7,046	100.0	37,308	100.0
Total Labour (incl. Occupiers) ⁴	11,715	100.0	60,147	100.0
1993				
Spouses	2,089	29.6	10,717	29.0
Casual and Seasonal Labour	459	6.5	2,769	7.5
Total Full-time Labour ¹	3,582	50.8	18,175	49.1
Total Part-time Labour ²	922	13.1	5,355	14.5
Total Hired Labour	2,948	41.8	15,009	40.5
Total Family Labour	1,556	22.1	8,521	23.0
Total Labour (excl. Occupiers) ³	7,052	100.0	37,016	100.0
Total Labour (incl. Occupiers) ⁴	11,760	100.0	59,786	100.0
1994				
Spouses	2,334	33.2	11,730	31.2
Casual and Seasonal Labour	448	6.3	3,007	8.0
Total Full-time Labour ¹	3,431	48.7	17,589	46.8
Total Part-time Labour ²	826	11.7	5,238	13.9
Total Hired Labour	2,779	39.5	14,710	39.2
Total Family Labour	1,478	21.0	8,117	21.6
Total Labour (excl. Occupiers) ³	7,039	100.0	37,564	100.0
Total Labour (incl. Occupiers) ⁴	11,597	100.0	59,954	100.0
1995				
Spouses	2,393	33.7	12,007	31.9
Casual and Seasonal Labour	481	6.8	3,118	8.3
Total Full-time Labour ¹	3,331	46.9	17,168	45.7
Total Part-time Labour ²	897	12.6	5,293	14.1
Total Hired Labour	2,764	38.9	14,443	38.4
Total Family Labour	1,461	20.6	8,028	21.4
Total Labour (excl. Occupiers) ³	7,102	100.0	37,586	100.0
Total Labour (incl. Occupiers) ⁴	11,511	100.0	59,666	100.0

Notes: ¹ Full-time hired labour + full-time family labour
² Part-time hired labour + part-time family labour
³ Total full-time labour + total part-time labour + spouses + casual and seasonal labour
⁴ Total full-time labour + total part-time labour + spouses + casual and seasonal labour + full time occupiers + part-time occupiers

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

Table 3.44 Change in labour for Grampian, 1991-95

Labour Type	% Change 1991-92	% Change 1992-93	% Change 1993-94	% Change 1994-95	% Change 1991-95
Spouses	4.0	3.3	11.7	2.5	23.1
Casual and Seasonal Labour	8.3	-5.2	-2.4	7.4	7.6
Total Full-time Labour ¹	1.5	-2.2	-4.2	-2.9	-7.7
Total Part-time Labour ²	2.6	5.0	-10.4	8.6	4.8
Total Hired Labour	2.6	-1.0	-5.7	-0.5	-4.8
Total Family Labour	0.1	-0.4	-5.0	-1.2	-6.4
Total Labour (excl. Occupiers) ³	2.8	0.1	-0.2	0.9	3.6
Total Labour (incl. Occupiers) ⁴	1.0	0.4	-1.4	-0.7	-0.7

Notes: ¹ Full-time hired labour + full-time family labour
² Part-time hired labour + part-time family labour
³ Total full-time labour + total part-time labour + spouses + casual and seasonal labour
⁴ Total full-time labour + total part-time labour + spouses + casual and seasonal labour + full-time occupiers + part-time occupiers

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

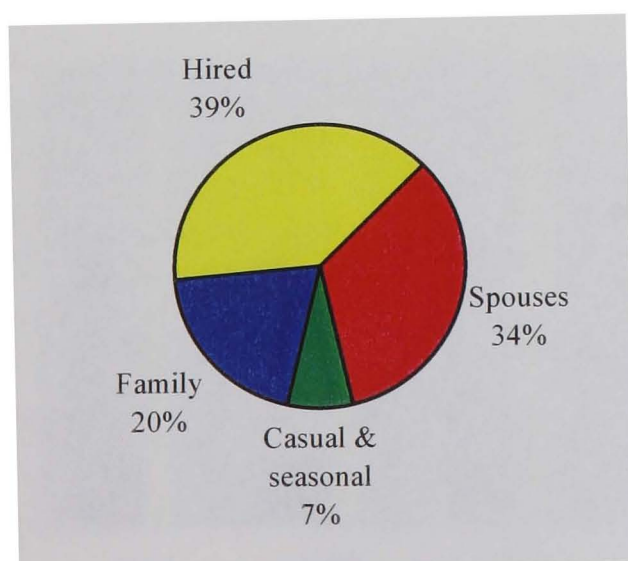
Table 3.45 Change in labour for Scotland, 1991-95

Labour Type	% Change 1991-92	% Change 1992-93	% Change 1993-94	% Change 1994-95	% Change 1991-95
Spouses	1.3	2.2	9.4	2.4	16.0
Casual and Seasonal Labour	3.7	-3.9	8.6	3.7	12.2
Total Full-time Labour ¹	-2.9	-3.2	-3.2	-2.4	-11.2
Total Part-time Labour ²	-0.6	3.8	-2.2	1.0	1.9
Total Hired Labour	-3.9	-1.8	-2.0	-1.8	-9.2
Total Family Labour	0.3	-1.6	-4.7	-1.1	-7.3
Total Labour (excl. Occupiers) ³	-0.9	-0.8	1.5	0.1	-0.2
Total Labour (incl. Occupiers) ⁴	-1.5	-0.6	0.3	-0.5	-2.3

Notes: ¹ Full-time hired labour + full-time family labour
² Part-time hired labour + part-time family labour
³ Total full-time labour + total part-time labour + spouses + casual and seasonal labour
⁴ Total full-time labour + total part-time labour + spouses + casual and seasonal labour + full-time occupiers + part-time occupiers

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991

Figure 3.5 Labour type in Grampian, 1995



In examining the data for the individual labour types it is clear that a number of structural changes took place over the period 1991-95. These changes are summarised here:

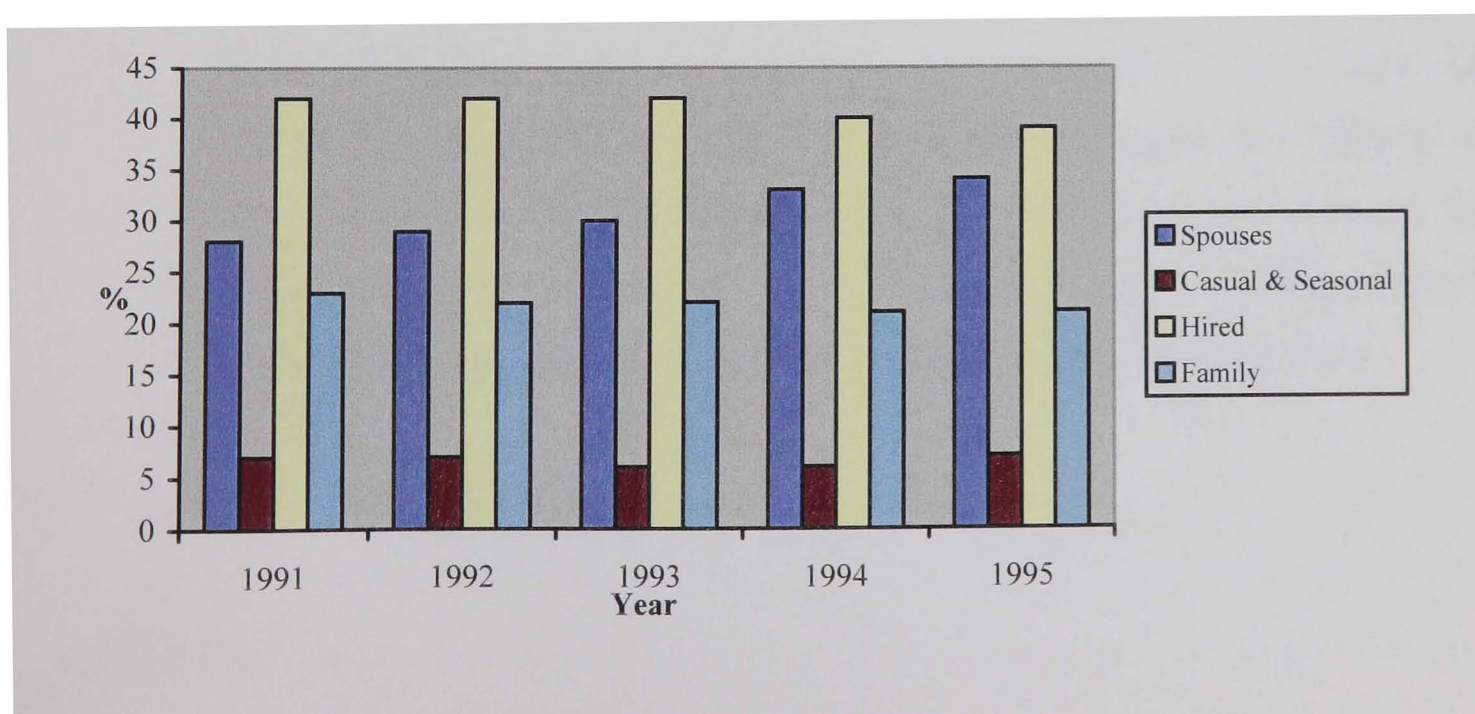
(i) Spouses

The number of spouses involved in farming has risen each year since 1991 (see Figure 3.7), reaching a total of 2,393 in 1995, a rise of over 23% since 1991. This change is larger than for Scotland as whole where the number of participating spouses rose by 16%. In 1995 spouses accounted for nearly 34% of total labour (excluding occupiers) in Grampian, compared to 32% in Scotland.

(ii) Casual and Seasonal Labour

The number of casual and seasonal staff in Grampian increased between 1991-92 (8%) but fell between 1992-93 and 1993-94 (-5% and -2% respectively). This trend was reversed again between 1994-95 when a rise of over 7% took place (see Figure 3.6). Despite the fall in numbers between 1992-94, an overall increase of almost 8% took place between 1991-95. For Scotland as a whole, casual and seasonal labour saw an overall increase of over 12% between 1991-95. In 1995 casual and seasonal staff accounted for nearly 7% of total labour (excluding occupiers) in Grampian, compared to over 8% in Scotland as a whole.

Figure 3.6 Changes in agricultural labour in Grampian, 1992-95



(iii) Hired Labour

Hired labour in Grampian increased by almost 3% between 1991-92 but then decreased each year over the period 1992-95 (see Figure 3.6) leading to an overall decrease of 5% over the period 1991-95. In 1991 hired labour accounted for over 42% of total labour (excluding occupiers) but by 1995 this figure had fallen to below 39%. Scotland as a whole experienced a larger decrease of over 9% in the number of hired staff between 1991-95. Hired labour in Scotland accounted for 42% of total labour (excluding occupiers) in 1991 but this figure had fallen to 38% by 1995.

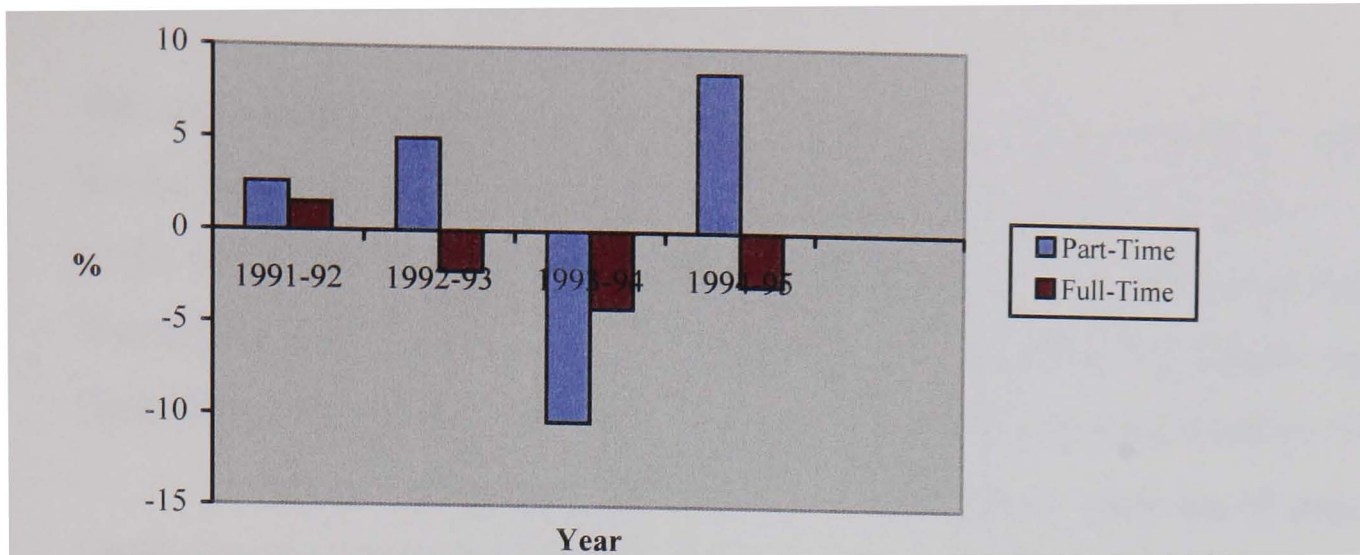
(iv) Family Labour

As with hired labour, family labour in Grampian increased very slightly between 1991-92 but then decreased each year over the period 1992-95 leading to an overall decrease of 6% between 1991-95. Accounting for 23% of total labour (excluding occupiers) in 1991, this figure had fallen to 21% by 1995. Changes for Scotland as a whole were not dissimilar with family labour decreasing by over 7% between 1991-95. Family labour in Scotland accounted for 23% of total labour (excluding occupiers) in 1991 but by 1995 this figure had fallen to 21%.

(v) Full-Time Labour

In Grampian full-time labour (full-time hired labour plus full-time family labour) increased slightly between 1991-92 but decreased each year thereafter leading to an overall decrease of 8% between 1991-95 (Figure 3.7). Full-time labour in Grampian accounted for 53% of total labour (excluding occupiers) in 1992, but by 1995 this figure had fallen to 47%. The overall change for Scotland was larger with a decrease of over 11% in full-time labour between 1991-95. Full-time labour in Scotland fell from 51% of total labour (excluding occupiers) in 1991 to 46% by 1995.

Figure 3.7 Changes in full-time and part-time labour in Grampian, 1991-95



(vi) Part-time Labour

In Grampian, part-time labour (part-time hired labour plus part-time family labour) saw an increase in numbers between 1991-92 and 1992-93 (3% and 5% respectively) but this was followed by a dramatic decrease of over 10% between 1993-94 (Figure 3.7). However, the picture changes again between 1994-95 when the number of part-time staff increases by over 8% thus showing an overall increase between 1991-95 of 5%. The overall changes for Scotland are not quite so dramatic, with a 2% increase in numbers between 1991-95. Part-time labour as a percentage of total labour (excluding occupiers) was not much different in 1995 from what it was in 1991, remaining at over 12% in Grampian and at just over 14% in Scotland as a whole.

3.7.3 Summary

The above trends illustrate the uncertainty of agricultural labour. Family labour fell but not at such a high rate as that of hired labour indicating a shift from hired to family staff. The number of spouses involved in farming increased steadily each year. Overall, full-time labour decreased while part-time labour increased. All this seems to depict cost-cutting and economising on farms in Grampian and also in Scotland as a whole. These trends could also represent a reluctance on the part of employers to commit to full-time employees (possibly due to the seasonal nature of much of the work on a farm) and at the same time a desire to maintain maximum flexibility in the workforce (see Copus, 1995a).

3.8 Summary and Conclusions

The aim of this chapter was to show the importance of Grampian agriculture to Scotland and to set the scene on the period covering the MacSharry CAP reforms (1991-95). The agricultural importance of Grampian to Scotland has been evident throughout this chapter and is further emphasised in Table 3.46, which summarises Grampian's agricultural structure as a percentage of the Scottish total in 1995.

Although accounting for just 11% of Scotland's agricultural area in 1995, Grampian accounted for 20% of its holdings. For land use area and livestock numbers, Grampian again accounts for a high percentage of the Scottish total in the majority of sectors. For the farm labour force, Grampian accounted for 20% of Scotland's occupiers, and 19% of total labour (excluding occupiers).

Table 3.46 Grampian's agricultural and livestock structure as a percentage of Scotland, 1995

Structure	Grampian as a Percentage of Scotland (%)
Agricultural Area	11
Number of Holdings	20
Crops/Land Use:	
Cereals	31
Oilseed Rape	37
Total Potatoes	22
Fodder Crops	33
Set-Aside	32
Woodlands	12
Livestock:	
Dairy Cattle	10
Beef Cattle	24
Sheep	8
Pigs	53
Poultry	20

In order to show how Grampian agriculture had changed between 1991-95, it was necessary to examine the various sectors individually. Of course as noted, not all changes can be attributed to CAP reform. In a number of instances other intervening variables have affected some sectors. For example, bad weather can have adverse effects on both arable and livestock farming. Where applicable, such variables and their effects are noted.

Looking firstly at land use, it was clear that the cause of major change to the agricultural structure of the area was the introduction of compulsory set-aside for

larger farmers, the main scheme whereby cereal crop production would be reduced. As the area of land set-aside increased, so the area planted with cereals decreased, falling by 15% between 1991-94. Winter cereals were particularly affected, although bad weather in autumn 1993 also contributed to reductions. At the same time the area sown with oilseed rape increased rapidly as farmers realised the financial benefits of this crop. Between 1991-94 the oilseed rape area in Grampian rose by 65%. Only when the set-aside requirement had decreased, by 1995, did the cereals area increase again (rising by 11% between 1994-95), and consequently, the oilseed rape area quickly decreased (falling by 30% between 1994-95). CAP reform also led to changes in farm woodland as financial assistance for creating woodlands became available. This led to a massive increase in woodland plantings: between 1991-95, Grampian's farm woodland area more than doubled, increasing by almost 58%.

In examining the main types of agricultural livestock in Grampian, it was clear that, as intended, some sectors were affected by the reforms more severely than others were. Changes to the dairy sector were relatively minor, leading to just small changes in production. In comparison, the beef sector underwent major changes with a number of new measures being introduced. Such changes (including in particular the changes to the SCP) had a favourable impact on the beef breeding herd in Grampian which rose by almost 8% between 1991-95 (more than twice the overall rise in Scotland). At the same time however, the feeding cattle herd decreased substantially, falling by almost 13% between 1991-94. In the sheep sector, where CAP reform resulted in modest changes to the existing regime, ewe numbers initially increased as producers tried to ascertain how the reforms would affect them. However, numbers declined every year between 1992-95, decreasing at a much higher rate than that of Scotland as a whole. Falling profitability forced many producers out of business and ewe numbers continued to decline as producers tried to make the most of the premium rights. As the breeding flock decreased so consequently did the lamb numbers. In addition, the lamb crop was affected by very poor weather conditions especially at lambing in winter 1994/95. Both changes to CAP *and* external factors, especially poor weather, therefore affected the sheep sector in Grampian. The pig and poultry sectors were not directly affected by CAP reform but both did benefit greatly from the reduction in feed costs due to the reformed cereals regime. Grampian's pig sector saw an increase in numbers of almost 9% between 1991-95 while the poultry sector saw rises of over 24%.

The last section of this chapter focused on changes in levels of occupiers and agricultural labour on Grampian farms. In examining farm occupiers, it was found that over the period 1991-95 numbers fell by 7%. Many of those who remained began operating on a larger scale as medium sized holdings were amalgamated to form larger holdings. Between 1991-93 the percentage of part-time occupiers fell and consequently the percentage of full-time occupiers rose. However, between 1993-95 this trend was reversed as the percentage of part-time occupiers increased and full-time occupiers decreased. Agricultural labour was found to be composed mainly of spouses and hired workers with the remainder made up of family labour (mainly) and casual labour. The changing trends found in these labour types depicted the uncertainty of agricultural labour.

It can be concluded from the above that between 1991-95 Grampian agriculture changed quite dramatically. As cereal production decreased so the area of set-aside increased as did the farm woodland area. In the livestock sector, dairy production decreased as did feeding cattle and sheep. Increases in production only took place for the beef breeding herd and pigs and poultry. Following such changes it is therefore not surprising to find that farm labour in Grampian has decreased significantly. Acreage set-aside will always lead to a reduction in the use of other production factors including agricultural labour (Koester and von Cramon-Taubadel, 1992). While some farmers have left farming all together others have clearly converted from full-time to part-time only, suggesting that full-time occupiers were finding alternative off-farm employment opportunities (although some decline is likely to be attributable to retirement and death). Where crop production and livestock numbers consistently fall over time, farmers often have no choice but to diversify into alternative crops/livestock or to seek off-farm employment (see Chapter 7). Therefore, the aim of limiting production of COPs and livestock on which subsidies would be paid has been met in Grampian following CAP reform. The overall effect of such changes has been to increase the size of farm holdings and to reduce the numbers of farm occupiers and agricultural labour types.

The following chapter now goes on to examine EU financial aid in Scotland and Grampian following the MacSharry reforms, showing the extent to which farmers have benefited financially, but also revealing the high level of dependency on subsidies. Subsequent chapters then present primary data, which focus on the survey of farmers in Grampian, examining their perceptions of the impact of the

reforms on agriculture. The changes to Grampian agriculture demonstrated in this chapter and the next are therefore more fully explained as the survey analysis further shows whether such changes can be explained by the MacSharry reforms.

Endnotes

¹ The annual census is presented as *Regional Summary Sheets on Scottish Agriculture* as at 1 June (e.g. SOAEFD, 1995a).

² In 1991 the government proposed the reorganisation of local government, moving away from the two-tier structure of authorities towards a single tier of unitary authorities. The government's case for reorganisation was presented in two Consultation Papers (Scottish Office, 1991; 1992) and was to become effective in Scotland in 1996 (Scottish Office, 1993). This was the first major restructuring since the 1970s when local government was radically reformed following the recommendations of the Wheatley Commission. For detailed information on the changes that took place, see Lloyd (1994) and *Local Government Chronicle: Review focus 3*, January 1995 (a special supplement on the new shape of Britain's local government).

³ As well as searching the different Universities library catalogues and hardcopy abstracts and indexes, searches were also carried out using Internet/CD-ROM databases such as *Social Sciences Citation Index*, *CAB ABSTRACTS* (CAB International) and *The AGRICOLA Database on CD-ROM*. For example, *AGRICOLA* (Agricultural Online Access) is a database with citations to agricultural literature obtained by the National Agricultural Library and co-operating institutions, as well as subfiles of related subjects supplied by information centres.

⁴ Other studies that examine farm diversification outwith Scotland include Damianos and Skuras (1996), Hutson and Keddie (1995), Barlier (1993), Ilbery and Bowler (1993), Brun and Fuller (1991), Ilbery (1991), Russell *et al.* (1991) and Magee (1990).

⁵ For the exact details see CEC (1993c) and the relevant Regulations in *Official Journal* nos. L181 of 1 July 1992 and L215 of 30 July 1992.

⁶ See North (1988) for a discussion of the MAFF set-aside scheme prior to CAP reform.

⁷ Bailey (1992) offers a commentary on the arable scheme, discussing what crops are covered by the scheme, the rules of set-aside and how set-aside land is to be managed.

⁸ By the end of 1994 the amount of surplus grain storage within the EU had been significantly reduced. Having been under pressure to do so for some time, EU agriculture ministers agreed to a reduction of 3% to 12% in the amount of land that arable farmers had to set-aside in 1995.

⁹ Buckwell (1992) examines in detail the objectives and likely effects of set-aside and suggests how to reduce its more undesirable effects.

¹⁰ See Walker (1993) for an examination of the alternatives to food crops.

¹¹ There are two ways that farmers can participate under the AAPS. Under the *Simplified Scheme* all payments were made at the same rate as for cereals and no

set-aside was required (only farmers claiming on a limited area of land are eligible for this scheme – approximately 15.51 ha in England). Under the *Main Scheme* option payments were made at different rates for different crops and it was compulsory for farmers to set-aside 15% of the land on which they were claiming AAPS as either rotational set-aside, flexible set-aside or guaranteed set-aside. The table below describes these different types of set-aside.

Table 3.47 Types of set-aside under the Main Scheme

Type of Set-Aside	Description
Rotational set-aside	This is land not set-aside under the AAPS at any point during the previous five years. Rotational set-aside is only available to farmers if all their set-aside land is in a six-year rotational set-aside.
Flexible set-aside	Farmers may choose to leave flexible set-aside in the same place or move it around. Even if some of the land is rotated, the farmers must choose the flexible option for all set-aside.
Guaranteed set-aside	Here the farmer must keep set-aside for five years. The farmer may also set-aside land in excess of his basic obligation if he so requires (known as <i>voluntary set-aside</i>).

¹² Maitland (1995a) give an example of one successful UK farmer who received £59,000 in subsidies from Brussels in 1994. His farm was made up of 200 acres of potatoes, 600 acres of wheat, 200 acres of sugar beet, 220 acres of peas for freezing or canning, and a small amount of linseed plus 100 acres of set-aside to qualify for cereal subsidies from Brussels. This farmer admitted that even a successful farm like his could not survive entirely without CAP subsidies.

¹³ OJ L 356, 24 December 1991.

¹⁴ That is, the EU of twelve Member States before the accession of Austria, Finland and Sweden.

¹⁵ The Farm Woodland Premium Scheme (FWPS) was launched in April 1992 (MAFF, 1992), superseding the Farm Woodland Scheme (FWS). This was the first scheme specially designed to attract farmers via financial incentives to convert land to woodland. See Appleton and Crabtree (1991) and Crabtree (1996) for more on this scheme in Scotland.

¹⁶ In 1997 the WGS offered planting incentives of between £700 and £1,350 per ha, with further supplements dependent on land type and planting location.

¹⁷ See also Gardiner and Ni Dhubhain (1994).

¹⁸ At this time an eligible ewe was a female sheep that had lambed at least once or was at least 12 months old by the end of the retention period (MLC, 1992c).

¹⁹ See Entwistle and Stott (1991) for more on blue ear disease in pigs.

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Chapter 4

EU Subsidies to Agriculture in Scotland and Grampian, 1991-95

4.1 Introduction

In this chapter an attempt is made to examine the extent of EU farm support in Scotland and, in particular, in Grampian Region following the 1992 MacSharry Reforms. The chapter begins by examining the rise in farm incomes in the early 1990s (Section 4.2). As well as a rise in the *amount* of subsidies being paid to UK farmers following the MacSharry reforms, the *value* of such subsidies rose dramatically due to the effects of the green exchange rate following the devaluation of Sterling. As the bulk of CAP spending relates to direct subsidies for livestock and arable farmers, this chapter will mainly examine this form of financial assistance. As noted below (Section 4.3), there is difficulty in examining indirect support at a regional level and so this is not examined in depth. The chapter therefore concentrates on the extent of EU direct income subsidies (Section 4.4), and subsequently analyses farmers' dependence on such subsidies (Section 4.5).

The CAP's price support measure is one under which EU farmers are paid more than world market levels for their produce. Prior to 1992 the tradition of the EU was one of high levels of price support for farm produce. The MacSharry reforms of 1992, however, broke with tradition when farm support was shifted away from high guaranteed prices towards direct income payments to farmers. Josling and Tangermann (1995) refer to this move as the most innovative element of the MacSharry reforms. The reforms therefore cut farm prices and compensated farmers for the loss of income through direct subsidies. This set in train the process of separating subsidies from prices. Subsidies guaranteed a minimum, or intervention price, for livestock that was much higher than the prices fetched on the world market while cereal farmers who took land out of production received 'set-aside' payments. This scale of support is not uncommon. Indeed, apart from New Zealand and Australia, all OECD countries subsidise their agriculture heavily. However, as the National Consumer Council points out (NCC, 1995), OECD studies consistently show that EU agriculture is among the most heavily supported of the major agricultural trading countries.

Bryden *et al.* (1993) estimate that in 1991 total EC spending in rural Scotland was between £280-90 million. Approximately £30-40m of this was 'structural fund' spending¹. Other forms of spending related to adjustment programmes such as PERIFA² and THERMIE³ (programmes which usually require additional support from national funds). But the bulk of EC spending related to agriculture: in 1991 CAP spending in Scotland was estimated to be around £236m (Bryden *et al.*, 1993). Of this CAP spending, market support⁴ accounted for £83m⁵. A further £3m of CAP spending comprised capital grants⁶ - part funding for agricultural improvement, processing and marketing, tree planting or other environmental projects. National expenditure on capital grants amounted to an additional £14m. Direct subsidies therefore accounted for £150m, taking the lion's share of Scottish CAP spending. Most of this support was for livestock⁷, the remainder being arable subsidies⁸. In addition to this EC funding, national expenditure on direct subsidies amounted to an additional £50m in 1991. In total, it was estimated that just over £300m was spent on the Scottish agricultural sector in 1991, £236m of which was reimbursed by the EC.

Bryden *et al.* (1993) further estimated that once the 1992 Reform had been fully implemented, direct subsidies would have increased by £162 million, although they do note that such an increase would be counterbalanced by some drop in market support. Such estimates did not take into account fluctuations in the green rate of exchange and the effects of such changes on the green currency system⁹. Therefore, before going on to ascertain the extent of subsidies in Grampian, the effects of the green exchange rate will first be examined.

4.2 Rising Farm Incomes

The amount of subsidies being paid to UK farmers had risen since the introduction of the MacSharry reforms but in addition to this the value of such subsidies suddenly began to rise towards the end of 1992. Between July 1992 and August 1994 the rate of the UK green pound to the ECU devalued by almost 17%. Between Black Wednesday in September 1992, after the UK Government abandoned the Exchange Rate Mechanism (ERM), and the end of 1994 the green pound devaluations led to an increase of 20% in support prices for UK farmers. Because farm subsidies are fixed in ECUs, farmers got more pounds when sterling

fell. Cereal farmers were now being paid up to £100 an acre not to grow wheat under the 'set-aside' reform of the CAP. In 1993 EU subsidies to UK farmers were approximately £2 billion and were set to rise to £3 billion by the following year. British farm incomes had risen back to their peak levels in the early 1980s. After 10 years of declining real incomes, farmers suddenly found themselves enjoying a windfall. Increases in farming incomes had followed a long term price squeeze which had led to job losses on the land and unemployment in agriculture-related industries. Farm equipment had become run down and investment had dropped. A rise in incomes now meant that the long term downward investment trend could be reversed which also meant good news for jobs in the supply trades and for the manufacturing industries.

Erlichman (1994) argues that three factors explain such a rise: sterling's devaluation, falling interest rates, and big subsidies. The devaluation of sterling sharply increased the value of the ECU-based subsidies UK farmers received from the EU, resulting in windfall profits. Grant (1995a, p. 14) notes that while UK farmers' incomes rose by 15% in 1993 as a result of reform and devaluation which increased the value of ECU payments, in comparison, farmers' incomes in Germany fell by almost 15%. The UK winners included cereal farmers, benefiting from devaluation as well as unexpectedly firm market prices, and some dairy, cattle and sheep farmers who enjoyed big gains as they are tied closely to EU subsidies. But not all were winners. On the losing side were pig farmers trying to recover from sharp losses over two years because of Europe wide over production; and sheep and cattle farmers in poor upland areas who were struggling to survive. Hill sheep farmers saw subsidies cut heavily - Hill Livestock Compensatory Allowances (HLCAs) were to be reduced from £130m in 1993 to £105m in 1994. However, despite such reductions, then Agriculture Minister, Gillian Shephard, said that incomes of British hill farmers rose by 33% in 1992-93 and forecast a further rise of 28% for the following year (Halsall, 1993).

In 1994 real income in the farming industry rose by 4.4% to £4.2 billion (Maitland, 1995b). Income to farmers and their spouses alone rose 6.3% to £3.2 billion. These rises were due to low inflation and low interest rates (which cut farmers' costs) and an increase in farm productivity. Cereal farm net incomes rose by almost 8% due to higher subsidies from Brussels and an increase in market prices. But dairy income remained unchanged and cattle and sheep farmers saw their income decrease by over 10%. Tractor sales in 1994 were 30% higher than in

1992. Farmers also reduced their total borrowings by £35 million, bringing the total down to around £6 billion.

Donaldson *et al.* (1995) examine the impact of the reform in South East England and South West France using an economic model. The results indicated that modal farms in both regions did not have lower farm incomes following implementation of CAP reform compared to the previous years, with incomes actually higher in the French model with CAP reform than without. In 1995 EU farmers saw their income rise by an average 2.6% in real terms (Maitland, 1996b). Eurostat, the EU's statistical office, attributed the overall rise to higher direct payments to farmers as compensation for progressive cuts in support prices for cereals and beef. Subsidies were up 10.2% in real terms. Maitland (1996b) noted that this rise reflected higher compensation and the large payments made to Austria, Finland and Sweden after joining the EU in 1995.

By 1995 UK farm incomes had jumped to their highest levels in 20 years. The UK thus recorded an increase in total income for the fourth consecutive year. A 29% real rise in farmers' incomes took place with incomes rising by £1 billion to just above £4 billion. Total income from farming (including partners, directors and family workers in addition to farmers and their spouses) rose 22% to £5 billion (Maitland, 1996a). Cereal farmers benefited the most as a result of high market prices and increased income payments.

Furthermore, farmers also saw the value of their land rise over the period 1992-95. The CAP system keeps the rental prices of land at artificially high levels because subsidies are paid on the basis of acreage. Demand for farmland coincided with the implementation of CAP reform in 1992. By 1995 Britain's land prices were at their highest since 1992 and were forecast to grow further (Harding, 1995).

Having established that EU direct income subsidies together with the green money system of the CAP inflated farm incomes in the UK to the highest levels for 20 years, the chapter now goes on to examine the extent to which Scotland, and in particular Grampian Region, have benefited from EU subsidies. Data for indirect support is unavailable at a regional level and so this form of support is only briefly examined below before proceeding to evaluate in more detail levels of direct subsidies.

4.3 Indirect Support

Copus (1995b) emphasises the difficulty in estimating indirect support through market intervention at regional levels:

The regional distribution of [indirect support] is very difficult to estimate due to upstream transfers (in the form of enhanced prices or demand) between spatially distinct livestock finishing and rearing areas (p. 19).

Data is thus not available below the UK level. As was seen above, Bryden *et al.* (1993) estimated that total indirect subsidies to Scotland in 1991 were only £83 million (and not all this was removed by Reform). The OECD developed a form of analysis to estimate support to the agricultural sector for various countries on an annual basis. This involves the calculation of 'Producer Subsidy Equivalents' (PSE) which is an established guide to measuring support. Support to farmers is paid in two ways: 1) 'visible' i.e. from direct transfers from taxpayers, easily measured as they involve visible amounts of subsidy to farmers paid through the various direct payment schemes; 2) 'invisible' i.e. transfers from consumers, difficult to estimate as it is paid implicit in the higher price which consumers pay for agricultural produce. PSE calculations take into account both forms of support as well as other types of transfer distribution. Patel and O'Neill (1996) estimate the level of PSE for Scotland over the years 1992-95. In estimating PSE at unadjusted world prices they found that from 1992 there was a dramatic shift in the balance of support towards direct support. In 1992 market support accounted for more than two-thirds of the entire PSE, but by 1995 it only accounted for less than half. The reasons for such an increase were twofold. Firstly, because direct payments increased as the compensation schemes introduced by the MacSharry reforms were phased in; and secondly, as was shown above, UK farmers benefited from the devaluation of Sterling.

Although it is not possible to show the level of indirect support at regional level, it is possible to examine direct subsidy payments at a regional level. The following section therefore examines changes in direct subsidy payments for both the livestock and arable sectors in Scotland and Grampian. All the data obtained was in current values so was duly deflated to 1991 values using the Retail Prices Index (RPI)¹⁰. As this research covers the period 1991-95, it must be recognised that many of the impacts of CAP reform would not have materialised until after 1995. However, it is still possible to create some picture of the impact of CAP

reform on direct subsidy payments to livestock and arable producers in Grampian Region.

4.4 Direct Subsidies

4.4.1 Total Direct Subsidies

Total direct subsidies to agriculture (that is livestock and arable subsidies) in Scotland's regions for the years 1991, 1993 and 1995 is shown in Table 4.1 below. Between 1991 and 1993 (the first transitional year of CAP reform) the real value of total direct subsidy payments increased by 72% in Scotland as a whole while Grampian Region saw increases of 137%. Over the period 1991-95 total direct subsidy payments to Scottish farmers rose from £149 million to £356 million, a rise of 139%. In the same period Grampian farmers saw their total direct subsidies rise from over £18 million to over £76 million, a rise of 316%. Of all the Scottish regions, Grampian received the fourth largest share (12%) of EC funding for total direct subsidies in 1991, that is over £18 million. By 1993 the region was receiving the largest share (17%) at over £43 million and was still in first place in 1995, receiving 21% of Scotland's total direct subsidies at over £76 million.

Table 4.1 Total direct subsidies to agriculture in Scotland 1991-95

Region	£'000 (1991 Prices)			% Change 1991-93	% Change 1991-95
	1991	1993	1995		
Shetland	4,472	6,113	6,175	36.7	38.1
Orkney	5,331	6,903	9,197	29.5	72.5
Western Isles	5,490	7,400	7,173	34.8	30.7
Highland	21,619	30,309	34,736	40.2	30.5
Grampian	18,336	43,374	76,205	136.6	315.6
Tayside	11,677	28,828	47,158	146.9	303.9
Fife	1,938	9,086	17,035	368.8	1,079.9
Lothian	3,555	10,248	18,132	188.3	410.0
Borders	16,256	29,934	42,620	84.1	162.2
Central	5,940	8,915	12,269	50.1	106.5
Strathclyde	31,476	42,903	45,292	36.3	33.3
Dumfries and Galloway	23,001	31,837	40,152	38.4	74.6
Scotland	149,093	255,851	356,145	71.6	138.9

Source: Derived from data received through personal communication with SAC.

Copus (1995a) points out however, that such rises in Scotland did not equate to an increase in total support because of the reduction in indirect price support i.e. price support and deficiency payments such as sheep and beef variable premiums¹¹.

Nevertheless, a reduction in indirect price support did not significantly affect output because of the favourable exchange rates experienced due to the UK's abandonment of the ERM. As Copus (1997, p. 6) points out, farmers "...nevertheless received compensation (at rates enhanced by currency changes) for a price reduction which did not materialise at the farm gate".

Table 4.2 shows total output for each of the Scottish regions and shows what percentage of that figure is attributable to subsidies. It is seen that in 1991 Grampian received 6% of its total output in the form of direct subsidies, rising to almost 14% by 1993 and rising again to 21% by 1995. Scotland as a whole saw similar increases over the same period with direct subsidies accounting for over 9% of Scotland's total output in 1991, rising to over 15% in 1993 and rising further to 19% by 1995.

Table 4.2 Total direct subsidies as a percentage of output in Scotland 1991-95

	1991		1993		1995	
	Total Output £'000 ¹	Subsidies as a % of Output	Total Output £'000 ¹	Subsidies as a % of Output	Total Output £'000 ¹	Subsidies as a % of Output
Shetland	11,554	38.7	14,393	42.5	14,692	42.0
Orkney	34,801	15.3	38,630	17.9	40,724	22.6
Western Isles	13,683	40.1	16,685	44.4	16,309	44.0
Highland	122,437	17.7	131,168	23.1	136,912	25.4
Grampian	300,591	6.1	319,846	13.6	364,076	20.9
Tayside	213,186	5.5	204,094	14.1	273,055	17.3
Fife	103,311	1.9	95,777	9.5	109,327	15.6
Lothian	83,538	4.3	84,199	12.2	100,736	18.0
Borders	143,265	11.4	145,762	20.5	167,396	25.5
Central	46,700	12.7	51,665	17.3	56,056	21.9
Strathclyde	297,741	10.6	331,985	12.9	311,449	14.5
Dumfries and Galloway	222,965	10.3	241,117	13.2	247,535	16.2
Scotland	1,593,771	9.4	1,675,318	15.3	1,838,266	19.4

Source: Derived from data received through personal communication with SAC.

Notes: ¹1991 values

4.4.2 Total Direct Livestock Subsidies

Total direct livestock subsidies in Scotland's regions in 1991, 1993 and 1995 are shown in Table 4.3 below. Over the period 1991-95 Scottish farmers saw an increase of 48% in total direct livestock subsidies - rising from £145 million in 1991 to £215 million in 1995. In Grampian, over the same period, total direct livestock subsidies rose by almost 75% - from almost £17 million in 1991 to over £29 million in 1995. Of all the Scottish regions, Grampian received the fourth largest share in

1991 and 1993 (12% for both years) of EC funding for livestock. This share had risen to 14% by 1995, with Grampian receiving the third largest share.

Total direct livestock subsidies as a percentage of livestock output between 1991-95 are shown in Table 4.4. For Scotland as a whole, subsidies as a percentage of livestock output rose from over 12% in 1991 to over 17% in 1995. In Grampian, subsidies as a percentage of livestock output also increased steadily, rising from almost 9% in 1991 to over 15% in 1995.

Table 4.3 Total direct livestock subsidies to Scotland, 1991-95

Region	£'000 (1991 Prices)			% Change 1991-95
	1991	1993	1995	
Shetland	4,472	6,101	6,164	37.8
Orkney	5,322	6,640	8,618	61.9
Western Isles	5,490	7,359	7,106	29.4
Highland	20,608	26,347	27,682	34.3
Grampian	16,815	21,742	29,377	74.7
Tayside	11,047	13,975	15,280	38.3
Fife	1,735	2,426	3,121	80.0
Lothian	3,366	4,232	5,301	57.5
Borders	15,908	21,168	23,964	50.6
Central	5,787	7,188	8,514	47.1
Strathclyde	31,396	41,200	42,297	34.7
Dumfries and Galloway	22,985	30,406	37,477	63.0
Scotland	144,934	188,784	214,901	48.3

Source: Derived from data received through personal communication with SAC.

Table 4.4 Total direct livestock subsidies as a percentage of livestock output in Scotland 1991-95

	1991		1993		1995	
	Total Livestock Output £'000 ¹	Subsidies as a % of Livestock Output	Total Livestock Output £'000 ¹	Subsidies as a % of Livestock Output	Total Livestock Output £'000 ¹	Subsidies as a % of Livestock Output
Shetland	10,991	40.7	13,972	43.7	13,963	44.1
Orkney	33,061	16.1	37,086	17.9	37,816	22.8
Western Isles	12,556	43.7	15,779	46.6	14,785	48.1
Highland	100,905	20.4	112,551	23.4	109,083	25.4
Grampian	190,597	8.8	210,377	10.3	193,100	15.2
Tayside	94,205	11.7	94,400	14.8	90,948	16.8
Fife	53,816	3.2	54,583	4.4	47,628	6.6
Lothian	43,359	7.8	47,783	8.9	46,923	11.3
Borders	88,128	18.1	97,507	21.7	96,192	24.9
Central	38,305	15.1	43,646	16.4	44,801	19.0
Strathclyde	287,284	10.9	320,466	12.9	296,657	14.3
Dumfries and Galloway	216,656	10.6	235,348	12.9	238,551	15.7
Scotland	1,169,864	12.4	1,283,606	14.7	1,230,446	17.5

Source: Derived from data received through personal communication with SAC.

Notes: ¹1991 values

4.4.3 Total Direct Arable Subsidies

Total direct arable subsidies in Scotland's regions for 1991, 1993 and 1995 are shown below in Table 4.5. For each of the three years examined, Grampian Region received the largest share of EU direct subsidies on arable crops: 37% in 1991 (£1.5 million), 32% in 1993 (£22.8 million) and 33% in 1995 (£52.3 million). When Table 4.3 and Table 4.5 are compared it is seen that in 1991 livestock subsidy payments in Scotland were worth more than 35 times the arable subsidy payments (£144.9 million and £4.2 million respectively). In Grampian in the same year livestock subsidy payments were worth more than 11 times the arable subsidy payments (£16.8 million and £1.5 million respectively). By 1993 this situation had changed dramatically. In Scotland as a whole the arable subsidies were now worth around a third of the livestock subsidies (£67.1 million and £188.8 million respectively) but in Grampian arable subsidies were now around the same level as livestock subsidies (£21.6 million and £21.7 million respectively). By 1995 total direct arable subsidies had increased even further. Livestock subsidies in Scotland were now only one and a half times greater than the arable subsidies (£214.9 million and £141.2 million respectively). In Grampian however, the tables had turned and arable subsidies were now more than one and a half times greater than livestock subsidies (£46.8 million and £29.4 million respectively). As Table 4.5 shows, the percentage change in total direct arable subsidies in Grampian between 1991-95 was an incredible 2,979%; the percentage change in Scotland over the same period was even higher at 3,296%.

Table 4.5 Total direct arable subsidies to Scotland 1991-95

	£'000 (1991 Prices)			% Change 1991-95
	1991	1993	1995	
Shetland	0	12	12	∞
Orkney	9	263	579	6,333
Western Isles	0	42	67	∞
Highland	1,011	3,962	7,054	598
Grampian	1,521	21,623	46,828	2,979
Tayside	631	14,854	31,877	4,952
Fife	203	6,661	13,914	6,754
Lothian	189	6,017	12,832	6,689
Borders	348	8,765	18,656	5,261
Central	152	1,727	3,755	2,370
Strathclyde	80	1,703	2,994	3,643
Dumfries and Galloway	15	1,431	2,675	17,733
Scotland	4,159	67,067	141,244	3,296

Source: Derived from data received through personal communication with SAC.

Table 4.6 shows total direct arable subsidies as a percentage of arable output in Scotland's regions between 1991-95. It is shown that for Scotland as a whole, arable subsidies as a percentage of arable output rose from 1% in 1991 to 17% in 1993, and rising further to over 23% by 1995. In Grampian, arable subsidies as a percentage of livestock output rose at an even higher rate, from over 1% in 1991 to almost 20% in 1993, and rising further to over 27% by 1995.

Table 4.6 Total direct arable subsidies as a percentage of arable output in Scotland 1991-95

	1991		1993		1995	
	Total Arable Output £'000 ¹	Subsidies as a % of Arable Output	Total Arable Output £'000 ¹	Subsidies as a % of Arable Output	Total Arable Output £'000 ¹	Subsidies as a % of Arable Output
Shetland	563	0.0	420	2.9	729	1.6
Orkney	1,739	0.5	1,543	17.0	2,908	19.9
Western Isles	1,127	0.0	906	4.6	1,524	4.4
Highland	21,532	4.7	18,617	21.3	27,828	25.4
Grampian	109,994	1.4	109,468	19.8	170,977	27.4
Tayside	118,981	0.5	109,693	13.5	182,105	17.5
Fife	49,495	0.4	41,193	16.2	61,699	22.6
Lothian	40,178	0.5	36,415	16.5	53,813	23.9
Borders	55,137	0.6	48,255	18.2	71,205	26.2
Central	8,395	1.8	7,913	21.8	11,255	33.4
Strathclyde	10,457	0.8	11,519	14.8	14,792	20.2
Dumfries and Galloway	6,309	0.2	5,769	24.8	8,983	29.8
Scotland	423,907	1.0	391,712	17.1	607,820	23.2

Source: Derived from data received through personal communication with SAC.

Notes: ¹1991 values

4.4.4 Regional Distribution of Direct Subsidies

Copus (1997, 1995a, 1995b) examines the regional distribution of direct subsidies to agriculture in Scotland, comparing the five years 1988-92 with 1993, the first transitional year of CAP Reform. He found that prior to reform, the highest "incidence" of direct subsidy payment was in areas that specialised in cattle and sheep rearing - the central and western Highlands and the Southern Uplands. For example in Shetland and the Western Isles, direct subsidies accounted for over one third of total output (Table 4.2). The lowest levels of subsidy was in the dominantly arable areas of the eastern coastal lowlands: Grampian received only 6% of it's output in the form of direct subsidies, and Lothian and Fife respectively received 4% and 2% of output in this form. In examining direct subsidies as a percentage of output in 1993, Copus (1995a, p. 6) argues that "CAP reform seems to be reducing

these Upland/Lowland contrasts in subsidy incidence to some extent". In 1993 Fife, which prior to reform received the least of output in the form of direct subsidies, now had the largest percentage increase in direct subsidy expenditure: the introduction of arable area payments led to an increase in payments of 369% (Table 4.1). Lothian saw an increase in payments of 188% while Grampian increased by 137%. However, in comparison, Shetland just increased by 37% while the Western Isles saw a change of only 30%. Such changes were even more dramatic by 1995 as Table 4.1 shows. Between 1991-95 total direct subsidies had increased by 1,080% in Fife, by 410% in Lothian and by 316% in Grampian. Over the same period the total increase for Shetland was 38% and for the Western Isles was 31%. However, despite such differences in subsidy payment increases, overall the regional pattern of subsidies incidence remained relatively unchanged. In 1995 Shetland and the Western Isles were still the winners in terms of high output in the form of direct subsidy (42% and 44% respectively). Grampian received 21% of its output in direct subsidy form while Lothian received 18% and Fife remained the region receiving almost the lowest percentage (less than 16%) of output in direct subsidy form (Strathclyde being the lowest at under 15%).

4.5 Subsidy Dependence in Scotland

The above examination of EU direct income subsidies demonstrated clearly how farm incomes had risen to such high levels following CAP reform. Indeed, Scottish Office Minister Sir Hector Munro said of the CAP reforms: "the good news is that this package should bring some modest benefit to farm incomes in Scotland" (Munro, 1992, p. 8). As noted earlier, as the reforms proceeded farm incomes did indeed rise but this surely led to an increased dependence on subsidies. Copus (1997) examines changes in the level of subsidy dependence in Scotland between 1992 and 1996. During this period total direct subsidy payments increased from £183 million to £476 million, more than doubling in real terms. Total indirect subsidies are omitted from the figures (leading to a slight overestimation) but even after taking this into account Copus (1997, p. 6) argues that:

... it seems evident that the effect of CAP reform has been to significantly increase levels of subsidy dependence. When it is recognised that in 1996 subsidies accounted for 25% of Scottish agricultural output, and roughly

90% of total income, the sustainability of such a situation must seriously come into question.

Gillanders (1994) argues that an examination of farm incomes gives ample evidence of Scottish farming's increasing dependence on subsidies. In 1993 net farm income in Scotland rose by 24% from £185 million to £229 million - almost double the 1991 figure of £115 million. A poor harvest in Scotland in 1993 was the reason that incomes rose by only 24% - the average UK increase was 62%. Gillanders (1994) states that this rise in Scottish farm incomes was arguably bad news. His reason for such an argument was that this rise in incomes was only as a result of a £102 million increase in Government and EU subsidies which totalled £283 million, a figure set to rise as CAP reform proceeded. He hypothesised that without such a high level of support Scottish farming would have incurred a net loss of £53 million, a loss which would have been even greater had there not been a £28 million reduction in bank interest payments and a small reduction in borrowing. In Shucksmith's (1999) study of crofters in the Isle of Skye, some of the main effects of the reforms, taken together with the devaluation of sterling, were found to be increased net farm incomes and substantially increased crofters' dependence on subsidies and their vulnerability to their withdrawal.

Apart from dairying and pigs, all sectors of the Scottish farming industry saw their dependence on support increase dramatically since 1989 and especially since implementation of CAP Reform. The average subsidy on all types of farm increased from £5,302 in 1988-89 to £17,429 in 1993-94 (Gillanders, 1994). In 1994 subsidies accounted for 54% of cash income on the average farm compared to 26% in 1989. Cereals and cropping farms saw the highest increases in subsidy dependence for income - up from 5% to 59% and from 3% to 44% respectively; specialist sheep farms were up from 87% to 132%, mixed farms were up from 18% to 70% (Gillanders, 1994). The increases on specialist sheep farms and cattle farms were more modest.

Gillanders arguments on increasing dependence on subsidies are found to be true in Grampian. In examining average farm incomes on all types of farm in Grampian it is abundantly clear that without subsidies farmers in the region would have been very poorly off. Table 4.7 below outlines the Net Farm Incomes (NFI) and total subsidy values (in real terms) for Grampian farms from 1991/92 to 1995/96 (using the average for all types and all sizes of farms). These figures clearly emphasise the importance of subsidies to Grampian farmers. When the NFI

Table 4.7 Net Farm Income and total subsidies for Grampian farms 1991/92-1995/96

Year	£ (1991 Prices)		
	Net Farm Income (Excluding Subsidies)	Total Subsidies	Net Farm Income (Including Subsidies)
1991/92	600	9,571	10,155
1992/93	12,176	9,607	21,783
1993/94	3,699	17,433	21,132
1994/95	(2,183)	20,977	18,794
1995/96	(9,230)	27,006	17,776

Source: Derived from data received through personal correspondence with the SOAEFD.

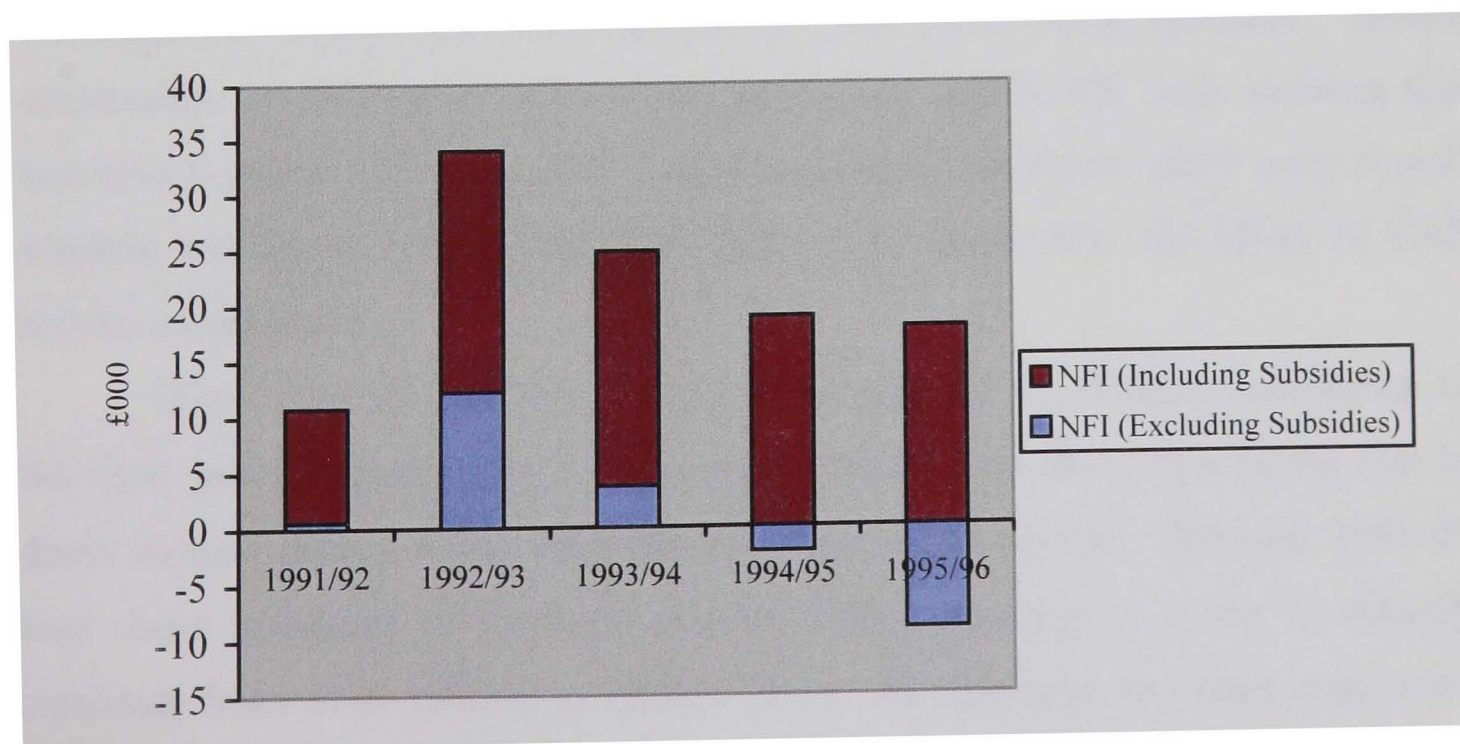
Table 4.8 Percentage change in Net Farm Income and total subsidies for Grampian farms 1991/92-1995/96

Period	Percentage Change (%)	
	Net Farm Income (Including Subsidies)	Total Subsidies
1991/92-1992/93	114.5	0.4
1992/93-1993/94	-3.0	81.5
1993/94-1994/95	-11.1	20.3
1994/95-1995/96	-5.4	28.7

Source: Derived from data received through personal correspondence with the SOAEFD.

is shown excluding subsidies it is seen that while farmers received over £12,000 in 1992/93, they clearly made a net loss in 1994/95 and even more so in 1995/96. The real value of subsidies rose each year as shown in Tables 4.7 and 4.8, with the best rise between 1992/93 and 1993/94, a rise of almost 82%. However, as total subsidies rose, NFI (excluding subsidies) fell to such an extent that even with such increases in subsidy values NFI (including subsidies) continued to fall each year from 1992/93.

Figure 4.1 Net Farm Income for Grampian farms 1991/92 to 1995/96



The dependence of farmers on subsidies for their income is more clearly illustrated in Figure 4.1 above where it is seen that without subsidies income falls to very low levels.

In 1994 the TSB Bank's Agricultural Manager commented on the increase in farmers' incomes:

The most significant fact emerging from the incomes figures is that the Scottish farming industry's income last year was alarmingly dependent on two sources - the effect of sterling's devaluation and subsidy. A detached observer would conclude that this is no long term future on which to base an industry's financial success (quoted in Gillanders, 1994, p. 5).

Truly there is a certain unhealthiness to such a subsidy dependent situation, a situation which consequently undermines two of the CAP Reform objectives: to reduce expenditure on support for farmers and to make farmers more responsive to the market place.

4.6 Conclusions

Farm spending rose steadily over the period 1991-1995 with estimates of further rises thereafter. Following the MacSharry Reforms of 1992 farm support was shifted towards direct income payments to farmers, better known as 'subsidies'. This chapter examined the extent of subsidies and showed the increase in already large subsidies that took place under the MacSharry Reforms. These amounts increased greatly after the UK abandoned the ERM and a devaluation of sterling took place as farmers got more pounds for their ECU based subsidies. Indeed devaluation of sterling played a large part in the rise in UK farm incomes that occurred between 1992 and 1995. As was pointed out above, there were overall winners and losers but on average farmers did benefit from the effect of CAP reform on subsidies.

When attention was then turned to the scale of EU financial assistance to Scotland and Grampian what became more evident was the extent of the rise in direct income subsidies for both livestock and arable sectors. Between 1991-95 total direct subsidies in Scotland rose by 139%, resulting in a rise in subsidy payments from £149 million to £356 million. In Grampian the rises were even more staggering with total direct subsidies rising by 316% between 1991-95, with payments increasing from £18 million to £76 million. On average, livestock

farmers in Scotland saw their total direct subsidies rise by 48%. Grampian farmers however saw their livestock subsidies rise by almost 75%. Furthermore, the rise in total direct arable subsidies is quite overwhelming. Scottish farmers saw their arable subsidies rise by a staggering 3,296% while arable farmers in Grampian saw rises of 2,979%. Prior to CAP Reform Grampian was not an area with high incidence of direct subsidy payment, the Region being a dominantly arable area and not so specialist in cattle and sheep rearing as, for example, the central and western Highlands. Thus, following the reforms arable farmers in Grampian benefited greatly in financial terms from such an increase in subsidies.

In terms of total direct subsidies contributing to total output, it was seen above that Scotland as a whole and Grampian Region both saw dramatic rises. In 1991 Scotland received over 9% of its total output in the form of direct subsidies; this had risen to over 19% by 1995. For Grampian over the same period the rise was from 6% to 21%. Total direct subsidies as a percentage of livestock output for Scotland and Grampian rose between 1991-95 from 12% to 17% and 9% to 15% respectively. For arable output the rises are even more dramatic: for Scotland total direct arable subsidies rose from 1% in 1991 to over 23% in 1995 while Grampian saw a rise from 1% to over 27%.

Overall, farmers in Grampian did financially benefit from the increase in subsidies following the MacSharry reforms, indeed they did better than those in Scotland as a whole. Of course, as was noted above, the devaluation of sterling that occurred shortly after the implementation of the reforms also contributed to increased farm incomes. However, as a consequence of all this, it can only be that over the period in question farmers became more dependent on subsidies and arguably became “subsidy junkies”. For Grampian, it was clearly shown that without such high levels of subsidies, farmers would have undoubtedly faced substantial net losses in incomes.

Having to this point examined the MacSharry CAP reforms (Chapter 2), explained the agricultural situation in Grampian (Chapter 3) and determined the level of EU financial assistance to the region in this chapter, the scene has now been set. The following chapter now describes the methodology chosen to collect the survey data in order to assess the impact of CAP reform on farmers in Grampian and evaluate levels of farm diversification in the region.

Endnotes

¹ EC 'Structural Funds' for rural Scotland are spent on non-agricultural programmes and projects, mainly on infrastructure, and also on farm diversification, rural training and support of rural businesses.

² PERIFA is a programme targeted at regions affected by loss of employment because of international agreements on disarmament and from trade concessions for Central and East Europe.

³ The THERMIE programmes give support to innovative projects using natural energy resources or reducing carbon dioxide emissions.

⁴ Market support consists of different mechanisms for ensuring higher prices for agricultural products. Bryden *et al.* (1993, p. 9) refer to market support as "...[p]erhaps the least visible..." of the three types of European assistance to agriculture. They go on to define market support expenditure as:

... comprising the cost of intervention purchasing, export refunds, humanitarian aid, and subsidies paid to the processors in order to sustain prices (such as the oilseed crushing subsidy, or the casein subsidy), minus the income from co-responsibility levies, and sales out of intervention... (p. 10).

⁵ Bryden *et al.* (1993) estimated that total market support in Scotland for 1991 was £83.8 million of which oilseeds accounted for 36%, beef for 28%, cereals for 24%, dairying for 24% and sheepmeat for 0.2%.

⁶ Capital grants to Scotland's agricultural sector were of two sorts:

1. *Agricultural Improvement and Marketing Grants.* The grant schemes included under this heading are:

Agricultural and Horticultural Development Scheme/Farm and Horticultural Development Scheme
Agricultural Improvement Scheme
Rural Enterprise Programme incorporating:
 Business development Scheme
 General Marketing Assistance
 Livestock Quality/Health Scheme
Crofting Counties Agricultural Grant Scheme/ Building Grants and Loans
Farm Accounts
FEOGA Processing and Marketing

2. *Environmental Grants.* The grant schemes included under this heading are:

Farm and Conservation Grant Scheme
Farm Woodland Scheme
Environmentally Sensitive Areas

⁷ Livestock support included the following:

- Annual Ewe Premium (AEP) - a headage payment, fully EC funded;
- Sheep Variable Premium (SVP) - an EC deficiency payment specific to the UK, phased out between 1990 and 1992;
- Hill Livestock Compensatory Allowances (HLCAs) - a headage payment for sheep and cattle producers in LFAs;
- Beef Special Premium (BSP) - a headage payment on male beef cattle, paid at slaughter;
- Suckler Cow Premium (SCP) - paid annually on cows used for breeding beef calves;
- Compensation for cuts in milk quotas;
- Milk Outgoers Scheme.

⁸ Direct subsidies on arable crops were of three types:

- set-aside subsidies;
- small scale cereal producers aid (the refund of co-responsibility levy);
- grass seed and linseed aid.

⁹ The original green money system was introduced in 1969 in order to protect farmers and consumers from currency fluctuations. The Commission thus invented 'green money' as a mechanism which would sustain one single price when the values of the currencies in which that price was set were constantly changing. Mooney (1995) defines green currencies as "the artificial rates at which farm supports and price guarantees under the EU's common agricultural policy are translated from European currency units into national currencies" (p. 23).

¹⁰ The RPI for the years 1991, 1993 and 1995 are shown in the table below.

Table 4.9 Retail Price Index for 1991, 1993 and 1995

Month	1991	1993	1995
January	130.2	137.9	146.0
February	130.9	138.8	146.9
March	131.4	139.3	147.5
April	133.1	140.6	149.0
May	133.5	141.1	149.6
June	134.1	141.0	149.8
July	133.8	140.7	149.1
August	134.1	141.3	149.9
September	134.6	141.9	150.6
October	135.1	141.8	149.8
November	135.6	141.6	149.8
December	135.7	141.9	150.7
Total	1,602.1	1,687.9	1,788.7
Average	133.5	140.7	149.1
Increase	1.00	1.05	1.12

Source: Parrington (1997), p. 43

¹¹ See Endnote 7 above.

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Chapter 5

Survey of the Impact of the 1992 MacSharry CAP Reforms on Agriculture in Grampian Region: Methodological Description

5.1 Introduction

This chapter presents the hypotheses informing the surveys conducted as part of this research and describes the methodology chosen to collect the data seeking to test part of these. The general aim of this research is to assess and explain the impact of the 1992 reform package of the Common Agricultural Policy (CAP) in Grampian Region by means of empirical study of this impact. More specifically, the central hypothesis is that:

The aims of the 1992 MacSharry CAP reforms were to reduce rising budgetary costs and surplus production and to encourage more extensive farming methods, in turn protecting the environment and reducing surpluses. Whilst continuing to safeguard the basic CAP principles, two main policy instruments would be embraced: lower intervention prices and direct subsidy payments to farmers. In the case of Grampian it is hypothesised that between 1992-95, the overall effect on agriculture and on the industries indirectly related to agriculture was a positive one. The secondary hypothesis is that the consequences of change wrought by MacSharry on the existing pattern of agriculture was an acceleration of industry change as farmers increasingly engaged in diversification and a variety of alternative farming methods.

A survey of farmers in the region was chosen to investigate the impact of CAP reform on Grampian Region and to evaluate the extent of alternative farming activities caused by the reforms. This chapter examines the empirical fieldwork relating to this survey with an analysis of the quantitative methodological approaches used in this process. A separate survey was undertaken to examine the effect of CAP reform on the agriculture-related industries in Grampian. The results of this survey are described and commented on in Chapter 7.

Quantitative research, in terms of secondary analysis and, more importantly, primary research, was the data collection method employed in order to survey the impact of EU agricultural policy on agriculture in Grampian Region. A structured questionnaire was completed through face-to-face interviewing with a sample of full-time and part-time farmers in the Region. The sampling technique employed

was that of *quota sampling* and a total of 227 farmers (representing 5% of full-time and part-time farmers in the Region) were chosen for the survey using this method. The 227 questionnaires were completed at a number of different agricultural marts throughout the Region (see Table 5.1).

The chapter begins by looking at *how* the survey was conducted (Section 5.2) and then goes on to examine the reasons *why* the survey was conducted in this fashion (Section 5.3). The following analysis therefore looks in detail at the questionnaire type and design, the pilot study, the sampling frame and the actual implementation of the survey.

5.2 Research Methodology: Implementing the Survey

Ackroyd and Hughes (1992) define survey research as “simply a matter of defining one’s problem and selecting the appropriate tool or method for that problem” (p. 25). There are a variety of techniques which can be used to collect data: the highly formal, the completely quantitative to the completely qualitative, the impressionistic and also the journalistic (Ackroyd and Hughes, 1992). Some social science researchers argue that some methodological approaches are incompatible with others (Schwandt, 1989; Lincoln and Guba, 1985) whereas others see the merits of using a variety of research methods (Allan, 1991; Patton, 1990; Eisner, 1981; Reichardt and Cook, 1979). In this chapter the quantitative research methods (and their appropriateness) which were chosen to investigate this particular research problem are fully examined. These are methods which tend to be of interval or ordinal type that can be manipulated by statistics.

5.2.1 Quantitative Research

Glesne and Peshkin (1992, p. 5) define quantitative research as “a research process that uses an instrument, involves a large number of people, and is analysed by reducing the data to numbers”. It is a process that involves collecting a limited amount of information about a large number of cases. Under this approach, researchers search for explanations and predictions that will generalise to other

people and places. In order to produce generalisable results sampling strategies and experimental designs are employed.

There are two broad types of quantitative research: *primary research* (where the researcher both collects and analyses data) and *secondary analysis* (where data from secondary sources, for example, population censuses, is analysed).¹ Although a proportion of the information collected here is by means of secondary analysis, primary research has been the main focus of the data collection.

There are a variety of ways of collecting primary data (Sommer and Sommer, 1980; Ragin, 1994) of which the questionnaire is the most widely used. This data collection technique is of a highly structured form whereby each respondent is asked the same set of questions. The respondent can fill out the questionnaire and return it by mail to the researcher or it can be administered by face-to-face or telephone interviews.² As mentioned in the opening paragraph of this chapter, data was primarily collected for this research by the use of a questionnaire of pre-arranged questions administered to a sample of farmers in the Region through face-to-face interviews. The following three sub-sections now examine in detail how the survey was implemented.

5.2.2 Questionnaire Wording and Design

The questionnaire was designed to provide a database to evaluate farmers' perceptions of the impact of CAP reform and to attempt to explore the influence of the reform on alternative farming methods. A structured questionnaire was constructed which was administered by face-to-face interviews to a sample of 227 farmers in the Grampian Region. The questionnaire is reproduced in Appendix A. The questions were grouped into four main sections to help structure the questionnaire and provide a flow:

- 1. Farm Details**
- 2. Consequences of the 1992 CAP Reforms:**
 - Cereals, Oilseeds and Protein Crops
 - Beef
 - Dairy
 - Sheep
 - 'Accompanying Measures'
 - Diversification
- 3. Other Consequences of the Reforms**
- 4. General**

An attempt was made to word the questions carefully using clear, unambiguous and useful questions. The questions were mainly of a closed type where respondents were asked to circle the answers that applied to them. Alternative responses were given to many questions and an attempt was made to ensure that the range was exhaustive in order to avoid biasing responses. To ensure that nothing was missed out, where appropriate, respondents were given the choice of 'Other' and asked to specify. Where respondents were asked opinion questions, a 'Don't know' response was provided to avoid forcing respondents to give their opinion on issues on which they had no opinion. Open-ended questions were kept to a minimum: out of a possible 31 answers only two required an open-ended answer.

Contingency questions were also used. With these types of questions, respondents were asked to move onto the next section if a particular set of questions were not relevant to them. For example, farmers who did not rear dairy cattle or sheep could skip these sub-sections.

5.2.3 Pilot Testing

The questionnaire was first tested informally on colleagues and friends. A copy was also sent to one of the branches of the National Farmers Union of Scotland (NFUS) - key insiders with a good knowledge of the people to be surveyed. Here it was examined for suitability in terms of length, wording and question content. As a result one question which was deemed of little importance was dropped and a suggestion was made for the inclusion of two others. A pilot study was then undertaken using the kind of respondents to be used in the main survey. In this situation the survey population was large enough to take a pilot sample without jeopardising the main sample. The pilot study took place at Thainstone Agricultural Centre (TAC), situated at Thainstone, Inverurie (see Figure 5.1). This is the main agricultural auction mart in the north and north-east of Scotland (see Section 5.3.5 below for a detailed description of TAC).

Respondents were picked at random from those gathered around a snack bar awaiting the next sale of relevance to them. They were given an explanation of what the survey was about and asked two preliminary questions: Are you a farmer? Are you a farmer in the Grampian Region? Those who answered 'Yes' to both

questions and were willing to participate in the survey were chosen for the pilot study. Fourteen questionnaires were completed for the pilot study.

The pilot study did not appear to highlight any problems with the questionnaire. Respondents were told that they were participating in a pilot study for a larger survey and were asked their opinion on aspects of the questionnaire such as question length, question wording, comprehensibility of the questions and question layout. From the responses there did not appear to be any necessary changes to be made to the questionnaire. However, additions were made to question (8), (10), (11), (12a) and (12b) in that a fourth option, *Variable Changes*, was added to the list of responses provided for these questions. A pilot study is therefore a useful tool for a variety of reasons. It enables the researcher to estimate how long the questionnaire will take to complete, ensures that the questions being asked are meaningful to the average respondent, and determines whether all questions are worth asking. It therefore enables the researcher to justify changes in questions, presentation and timetable. A pilot study will result in improvements to the questionnaire and increased efficacy, but it must be realised that it will not always highlight all the problems of the main survey. For example, in this survey 20 questionnaires were completed after the pilot study before a mistake was noted. Question (2) required the respondent to circle the relevant age category that he/she fell into:

1. 18-35 years
2. 36-55 years
3. 56 years or over

It was only after 20 questionnaires had been completed at the first visit to one of the marts that it was noticed that the third category read *55 years or over*. This was immediately changed to that shown above. On the whole, however, the pilot study was successful and so the main survey was able to proceed without delay.

5.2.4 Administering the Questionnaire

Questionnaires were completed with 227 different farmers, representing 5% of full-time and part-time farmers in Grampian Region (see Table 5.2 for a breakdown of this figure). The sampling technique employed was that of *quota sampling* where a sample was deliberately selected which reflected the known composition of the target population. A quota of 227 was chosen for this survey in order to reflect the

proportion of different types of arable and/or livestock farmers in the target population. The sample is therefore assumed to be representative. The criteria used to establish who should be in the sample was that each respondent had to be a farmer in the Grampian Region, regardless of age, sex, size of farm, location of farm, use of agricultural land and forms of livestock reared, if any. This 'quota control' was used to limit the number of respondents chosen within predetermined quotas. It was therefore necessary to go out and look for respondents who conformed to the quota requirements i.e. going to the various agricultural marts in the Region and finding those in the quota controls. As noted above, two preliminary questions had to be asked to ensure that those contacted met the quota requirements: Are you a farmer? A farmer in the Grampian Region? Table 5.1 below shows the date that visits were made to each mart and the number of questionnaires collected on each particular visit.

Table 5.1 Questionnaire data collection timetable

Date	Mart	Sale Type	Questionnaires Completed
07.10.94	TAC ¹	(a) Weekly Sales (Friday) ² (b) Special Sale: Multi-Breed Show & Sale of Pedigree Beef Cattle.	20
13.01.95	TAC	(a) Weekly Sales (Friday) ² (b) Special Sale: Dairy Cattle	29
25.01.95	Maud	(a) Weekly Sales (Wednesday) ² (b) Special Sale: Store Cattle	5
24.02.95	TAC	Weekly Sales (Friday) ²	30
10.03.95	TAC	Weekly Sales (Friday) ²	26
26.04.95	TAC	Special Sale: Store Cattle and Beef Breeding Cattle; Annual Multi Breed Show and Sale of Pedigree Beef Cattle.	22
22.06.95	Cornhill	Weekly Sales (Thursday) ²	8
27.06.95	Elgin	Weekly Sales (Tuesday) ²	17
28.06.95	TAC	Dairy Dispersal Sales; Special Sale: Commercial Beef Breeding Cattle.	18
30.06.95	TAC	Weekly Sales (Friday) ²	24
07.07.95	TAC	(a) Weekly Sales (Friday) ² (b) Special Sale: Dairy Cattle	28
TOTAL QUESTIONNAIRES COLLECTED			227

Notes: ¹ Thainstone Agricultural Centre

² See Table 5.4 for details of weekly sales at each of the Aberdeen & Northern Marts in Grampian Region.

The most questionnaires completed in any one visit were 30 (at TAC on 24.02.95). Each interview conducted took between four and seven minutes to complete, depending on the respondent. If a farmer had time and wished to discuss the issues raised in the questionnaire, the total time spent with that particular respondent was anything between ten and fifteen minutes. On average it was possible to complete

in the region of between eight and nine questionnaires in one hour. Each visit could only last on average between three and four hours as sales would start at between 10am and 11am and finish around 2pm (see Table 5.4). It was not appropriate to approach farmers at the ringside while sales were taking place and therefore they were approached whilst having a break outwith the rings. On some occasions, visits to TAC coincided with electronic sales that take place in the main foyer of the Centre. These sales would last up to 30 minutes and it was therefore not always easy to collect data during this period. Many visits to sites were therefore necessary to reach the quota set.

As Table 5.1 shows, only five questionnaires were collected at the agricultural mart at Maud. Maud, 34 miles north of Aberdeen City, is a small village in the district of Banff and Buchan (Figure 5.1). The farming land in this area is a mix of both upland and lowland. Maud hosts a small rural community and farmers who attend the mart there tend to be local, the trading area being within a short radius of the centre. Weekly sales of prime cattle and prime sheep take place there each Wednesday (see Table 5.4) as well as the 'Special Sales' which take place throughout the year (see Tables 5.5 and 5.6). The visit to collect data took place when, in addition to the weekly sales, a special sale of store cattle was also taking place. However, there were few farmers present at the sale. Others present were either lorry drivers or cattle dealers. As a result only five respondents participated in the survey.

The mart at Cornhill is similarly situated to that of Maud. It is a small village near the North coast of Banff and Buchan, 50 miles north west of Aberdeen (Figure 5.1). Cornhill mart is situated predominantly in upland farming country but some lowland farmers from other parts of Banff and Buchan also attend. Weekly sales of prime sheep and prime cattle take place at this mart each Thursday (see Table 5.4) but as with Maud, farmers in attendance tend to be local. A total of eight questionnaires were completed on the visit to this mart.

In contrast, Elgin is a large town 65 miles north west of Aberdeen in Moray district (Figure 5.1). Farming land in this area is predominantly upland. Seventeen questionnaires were completed at this mart - considerably more than at either Maud or Elgin, but nevertheless, a lower figure than completed on average at TAC. Even at this distance, farmers are prepared to travel to TAC to buy and sell livestock in

order to get the best prices. Overall, it tends to be the local farmers with few heads of sheep or cattle to buy or sell that attend these smaller marts.

A visit was also made to Laurencekirk Mart on 11.02.95. This is not indicated in the table as no data was collected on this particular visit. Laurencekirk is a town situated 30 miles south of Aberdeen in the district of Kincardine and Deeside, surrounded by lowland farming country. Weekly sales are held at Laurencekirk each Monday (see Table 5.4) and 'Special Sales' also take place on occasions (see Tables 5.5 and 5.6). The visit to collect data was made on a Saturday when a special sale of store cattle and beef-breeding cattle was taking place. It was not convenient to collect data at this mart as sales were taking place in one main ring where the auctioneer was using a loudspeaker system. Seating was situated around the ring and so it was therefore not practical to approach the farmers present due to the level of noise and the seating arrangements. All those present at the sales were gathered at the ringside; no-one was standing around outside. Due to the physical layout of this mart it was not therefore feasible to approach those present and have them participate in the survey.

From Table 5.1 it can be seen that the majority of questionnaires (87%) were completed at TAC, the main agricultural auction mart of Aberdeen & Northern Marts based in Grampian Region. Because of the importance of TAC, Section 5.3.5 below looks in detail at this agricultural centre and its importance to the farming community in Grampian Region.

Having examined *how* the survey was implemented, the following section now looks at *why* the survey was compiled and implemented in this manner. This involves examining the style and format of the questionnaire, the type of interview technique, the sampling method, the different agricultural marts at which the data collection was undertaken, non-response and rapport.

5.3 Research Methodology: Justifications

5.3.1 The Questionnaire

In order to select the best means of data collection, a review of different methodologies took place. Interviews were then conducted with officials of the National Farmers Union of Scotland (NFUS), Grampian Enterprise Ltd (GEL) and

the Scottish Agricultural College (SAC). These are organisations that often conduct research of differing types with the farming population and it was expected that they could suggest the best way to access the quality and quantity of data required. All recommended the questionnaire as the best method of data collection for this particular research. This method was then tested by conducting a pilot questionnaire which proved to be very successful. The questionnaire type, design and actual implementation had to be carefully considered to suit the objectives of the study and in particular the nature of the respondents. People are rarely compelled to give information and so there is little reason why they should answer survey questions. Because participation is therefore voluntary, it is important that in compiling a questionnaire every effort is made to encourage co-operation and interest in order to obtain a high response rate and accurate answers.

In terms of its degree of standardisation, the questionnaire was *structured*, that is, a schedule was constructed which was strictly adhered to for all respondents. The same questions, in the same order, were administered to all respondents in the same way in order to standardise stimuli. This type of interview is found at one end of a continuum. At the other end we find the *non-standardised* interview. With this type of interview the interviewer will have a list of topics which are to be covered in the interview. This type of interview is very flexible as interviewers are free to ask questions any way they like and in any order. The *focused* interview is similar to the non-standardised type, differing only in the extent to which the direction of the interview is controlled by the interviewer. Between the two extremes is the category of *semi-structured* interviews. This type of interview attempts to combine the advantageous points of the two extremes. Specific questions have to be asked but the interviewer is free to develop beyond each if necessary.

The non-standardised type is suitable mainly for exploratory studies where little is known about the topic. This was not the case with this survey and in addition, a large sample was necessary. The structured interview style was therefore chosen for the following reasons:

1. The administration of the interviews would cost less in terms of time and money. Non-standardised interviewing with a large sample would be costly as each interview could take up to two hours or more to administer.

2. Data produced in structured interviews is much easier and more straightforward to process in comparison to that of non-standardised which is not easy to code and analyse.
3. Structured interview results can also be presented in a quantitative form which is important for the testing of hypotheses.

These structured questionnaires were completed through face-to-face interviews with respondents. It was made clear from the interviews with the NFUS, GEL and the SAC that a postal questionnaire would provide a very poor response rate. One organisation, which wishes to remain anonymous, conducted a postal survey in connection with a CAP Review Scheme, to all farmers in the Grampian Region at the peak of CAP reform in 1992; the final response rate was 11%. It was therefore expected that if a postal questionnaire was used for this research, conducted two to three years after the reforms had begun to be implemented, an even lower response rate could be anticipated. It was therefore decided that the best way to collect the data would be by means of a questionnaire which would be completed through face-to-face interviews. Given the nature of the respondents, implementing the questionnaire in this fashion was suitable largely for the following reasons:³

1. This method yields a high response rate, compared with the other two methods. In a face to face situation, people are more likely to participate and respondents are less likely to 'break-off' an interview than they would, for example, with a telephone interview.
2. The interviewer is able to record both the context of the interview and also the non-verbal gestures of the respondent if deemed necessary. In this survey, some respondents, especially those with grievances they wished to air, spoke about their particular situation after the questionnaire had been completed. It was therefore possible to note some interesting comments that would not otherwise have been made if a postal questionnaire had been used.
3. It is easier to locate and secure the co-operation of the respondents. You are assured that the right person is completing the questionnaire.
4. It enables the interviewer to motivate and guide the respondent through the questionnaire. The presence of the interviewer ensures that respondents are interpreting the questions in the manner intended.
5. The interviewer can carefully record the answers and check that questions have not been accidentally missed out.
6. Rapport can be established and maintained with the respondent.

7. Overall the interviewer has a higher control of the interview situation.

However, there are a number of disadvantages in using this method of implementation:

1. In terms of time, this can be a slow process. Many visits to sites were necessary before all questionnaires were completed.
2. Bias can occur if more than one interviewer is involved as they could ask the questions in a different manner to each other. However, in this survey only one interviewer was used and an attempt was therefore made to ask each respondent the same set of questions in the same manner.

5.3.2 Question Wording

In any questionnaire the wording of the questions is of fundamental importance. Clear, unambiguous and useful questions must be developed. de Vaus (1994, pp. 83-6) provides a useful checklist of 16 questions which ought to be addressed in order to avoid the most obvious problems with question wording. These include: *Is the language simple? Can the question be shortened? Is the respondent likely to have the necessary knowledge? Will the words have the same meaning for everyone? Is the question wording unnecessarily detailed or objectionable?* These were important questions to address when taking the target population for this survey into consideration. Simple language was required - a simple question is more likely to be understood than a long complex one and so the shorter the question the better. It must be noted that farmers are busy people and to delay them unnecessarily had to be avoided. As Glastonbury and MacKean (1991) note, a “visibly fat questionnaire” or the likelihood of a lengthy completion will deter likely respondents. It was therefore advantageous to be able to say at the start that the questionnaire would only take up about five minutes of the respondents’ time. Unlike a postal survey, respondents here were not able to reflect on questions at their leisure or to look up records for accurate answers. This is clearly a disadvantage of this method and therefore the researcher had to be sure that the respondent was likely to possess the knowledge required to answer correctly.

Moser and Kalton (1971, p. 308) give some useful advice: “Watch out! Ambiguous questions will produce non-comparable answers, leading questions biased answers and vague questions vague answers”.

5.3.3 Questionnaire Design

A number of important factors had to be considered under this heading. Firstly, because the questionnaire was to be administered by an interviewer the questions had to be formed in such a way as to be easily read out - as in a normal conversation. Secondly, in designing the questionnaire, decisions had to be made on the response format - whether to use open-ended or closed (or fixed choice) questions. The questions in this survey were mainly of a closed type. This particular response format was chosen for a number of reasons:

1. Closed questions are quick to answer which was important in this situation as people's motivation to answer was likely to be low.
2. Closed questions are easier to code. It is the respondents who classify themselves therefore the coder is less likely to misclassify what people meant, as can happen in open questions. With open questions, the coding-categories can only be decided after the survey has been completed in order to assess the range of answers produced by the question
3. Closed questions ensure that the less talkative or incoherent people can also respond.
4. Providing a list of alternative responses can act as prompts for respondents.

As mentioned in Section 5.2.3, when developing alternative responses, the researcher must ensure that the range is exhaustive in order to avoid biasing responses. The pre-testing and the pilot study were both used to ensure that a thorough range of responses was provided. Use was also made of contingency questions. The order of questions set in these sections and sub-sections was important because if carefully done it would ease the respondent into the interview. Ackroyd and Hughes (1992) suggest that the questionnaire should start with uncontroversial and routine questions whilst personal and more intimate ones should come later when sufficient rapport has been established. In this survey however, the second question asked was about age. Contradictory to that argued by Ackroyd and Hughes, the placing of this question did not pose a problem at all, indeed many made a joke about their age which immediately established rapport.

Finally, care had to be taken that the questionnaire was well presented as in a face-to-face interview situation the respondents were able to see the questionnaire as it was being completed. Clear layout and printing were therefore essential.

5.3.4 Sampling

Ferber *et al.* (1980, p.3) define a survey as: “A method of gathering information from a number of individuals, a ‘sample’, in order to learn something about the larger population from which the sample is drawn” (cited in May, 1993, p. 65). At the turn of the century statisticians debated whether anything less than a complete enumeration of the survey population would suffice (Kalton, 1983). Today the use of sampling - that is collecting information about only some members of the population - in surveys is used extensively. A complete enumeration is not always feasible or possible and so many surveys are largely dependent on sampling.⁴

There are two broad types of samples: *probability* and *non-probability*. Probability sampling includes the following popular types: simple random sampling, systematic sampling, stratified sampling and cluster sampling. Using any of these methods will result in every individual in the population having a known, calculable and non-zero probability of being selected. Selection biases are therefore avoided and statistical theory can be developed to examine the properties of sample estimators.

With non-probability sampling, the chances of being selected are not calculable as some people have a greater or unknown chance of being selected and therefore no statistical analysis is possible as with probability sampling. Non-probability samples can therefore only be assessed by subjective evaluation. Despite this apparent weakness, non-probability sampling is widely used in practice. The primary methods of non-probability sampling are *purposive* or *judgemental sampling* and *quota sampling*, the method generally used of which there are many variants. With a quota sample, a sample is deliberately selected which reflects the known composition of the target population.

For this survey the non-probability method of quota sampling was chosen. A definite ‘quota’ of 227, representing 5% of full- and part-time farmers in Grampian Region, was chosen which reflects the proportion of different types of farmer in the target population. The sample is therefore assumed to be representative. Table 5.2 below gives a breakdown of the number of farmers in the Region who are full-time, half-time or more and less than half-time and also gives a comparison with the total figures for Scotland. All together, there are 4,558 full-time and part-time farmers in Grampian. Table 5.3 shows that this amounts to 20% of the Scottish total. Of all full-time farmers in Scotland, 21% are to be found in Grampian Region.

Table 5.2 Farm occupiers in Grampian and Scotland 1994

Region	Full-Time Occupier		Occupier Half-Time or More		Occupier Less than Half-Time		Total Full- and Part-Time Occupiers	
	Number	%	Number	%	Number	%	Number	%
Grampian	2,690	59	634	14	1,234	27	4,558	100
Scotland	12,549	56	3,767	17	6,074	27	22,390	100

Source: SOAFD (1994a)

Table 5.3 Farm occupier type in Grampian as a percentage of the Scottish total

Occupier Type	Total	% of Scottish Total
Full-time	2,690	21
Half-time or more	634	17
Less than half-time	1,234	20
Full and part-time total	4,558	20

Source: SOAFD (1994a).

The survey was aimed at all occupier types in order for the sample to be representative, thus full-time and part-time farmers were selected. There is the danger with random selection that the sample may appear 'unrandom' and be unrepresentative, for example, if the sample chosen included full-time farmers only, the sample would hardly reflect a true picture. However, in order to avoid selection bias in any sample design a random method is necessary. A non-random method will mean that the sample selection is consciously or unconsciously influenced by human choice. For this survey a strictly random method was not employed but an attempt was made to pick the sample as randomly as possible without unconsciously favouring or disfavouring some of the population units in the selection. Respondents to this survey do appear to be random in that they were made up of both full- and part-time farmers of differing types. The sample can therefore be said to be representative.

Those who attend the marts on any particular day are not necessarily all farmers so all kinds of people had to be approached regardless of age, sex and appearance. To ensure that particular sub-groups were adequately represented in the sample i.e. the different types of arable and livestock farmers, the method of stratification was employed. This involved dividing the population into the different groups or strata and sampling as randomly as possible within each. It was necessary to ensure that the sample group was as typical of the target population as possible in order to be able to make generalisations from the results. It was therefore necessary to plan in advance which sales to attend at the particular marts.

To have attended prime cattle sales only would have resulted in a biased sample as those rearing sheep, dairy cattle, farrow cows and so on would have had an unequal chance of being selected in the sample. Table 5.1 shows that a variety of different sales at different marts were attended during data collection to ensure that different farmer types were approached.

Randomness tends to be favoured in academic research as it ensures that the estimate of the population value is unbiased. However, practical aspects, for example, geographical spread of respondents, and the nature of the survey population (all those who are potential respondents) forced the use of non-probability samples (what Bryman, 1985, p.113, calls *convenience samples*) in this survey.

5.3.5 Implementing the Questionnaire

When it was realised that a postal questionnaire was likely to result in a very low response rate, plans had to be made of how, when and where it would be most convenient to carry out the data collection. The geographical spread of the sample population would cause problems if interviews were to take place at randomly selected farms throughout the Region. Grampian Region covers an area of 8,700km² with a population of 516,570. There are 6,648 agricultural holdings throughout the Region and a total of 4,558 full-time or part-time farmers (see Table 5.2 for a breakdown of this figure). A number of farmers will therefore own more than one farm in the Region.

The following discussion gives a brief account of the different Aberdeen & Northern Marts in Grampian Region⁵. Most of the data was collected at Thainstone Agricultural Centre, the main auction mart of Aberdeen & Northern Marts, which itself is a division of the AMN Group Ltd.

(a) ANM Group Ltd

ANM Group Ltd is one of Europe's largest farmer-owned agri-businesses. It has 8000 farmer members and annual sales of up to £240 million⁶. The main business of the Group is livestock auctioneering, although in the last few years they have adopted a diversification policy resulting in the group's involvement in auctioneering, meat processing, electronic auction, land agency and catering interests, both within and

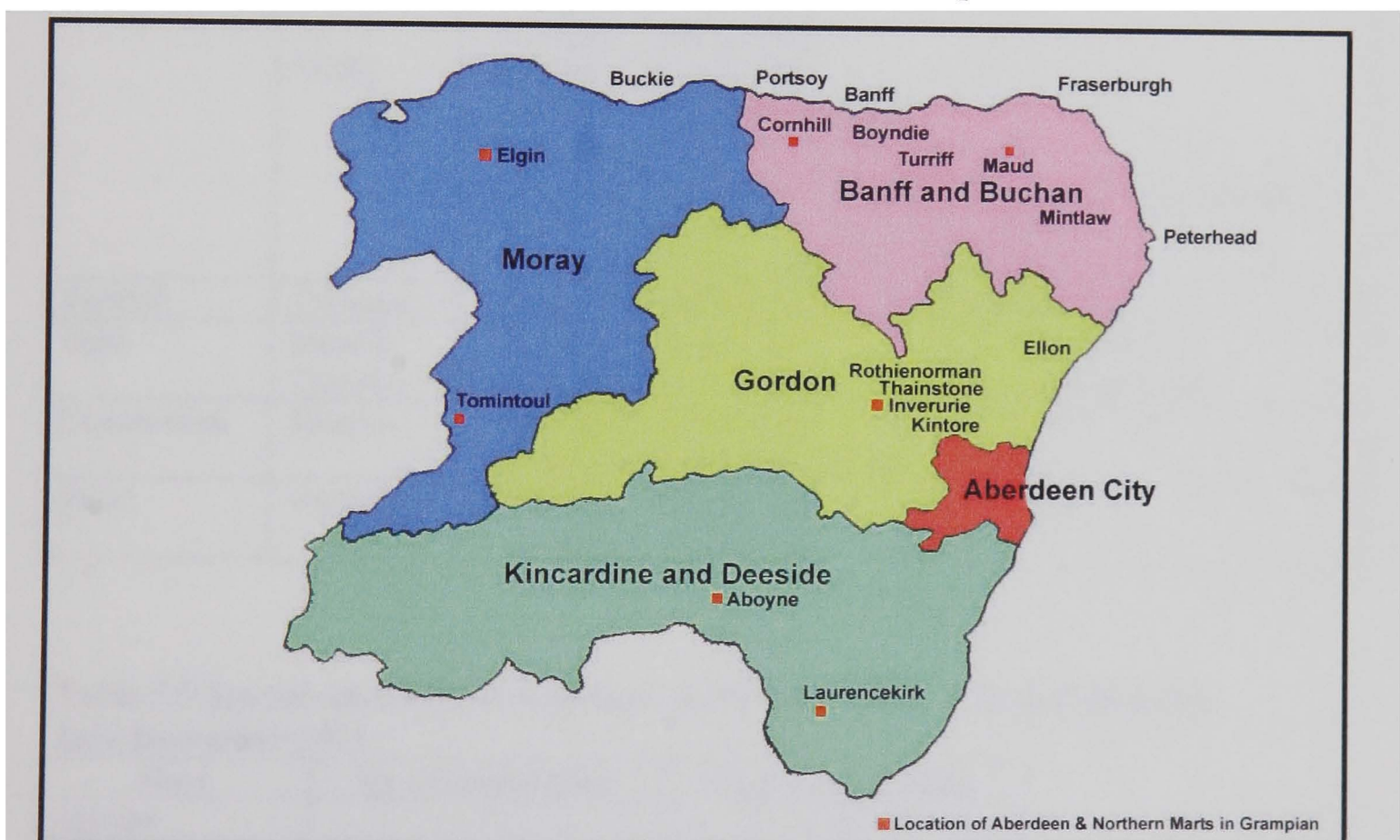
outwith the agricultural industry. The ANM Group is one of the most prosperous farmer-owned businesses in the UK.

(b) Aberdeen & Northern Marts

Aberdeen & Northern Marts is one of the main divisions of ANM Group Ltd. It is the largest farmer-owned auction company in Europe with annual sales of over £120 million. It meets the needs of both buyers and sellers by providing an extensive livestock marketing service. Live auction is mainly used but electronic auction sales are also offered.

Thainstone Agricultural Centre (TAC), by Inverurie, is the main auction mart. In addition to TAC there are five satellite auction centres at Caithness Livestock Centre (Wick, Highland Region), Laurencekirk, Maud, Cornhill and Elgin (all in Grampian Region) (see Figure 5.1 for the location of the Grampian marts). Weekly sales are held at all these branches.

Figure 5.1 Location of Aberdeen & Northern Marts in Grampian



Times and details of the weekly sales which take place at the five marts based in Grampian Region are shown in Table 5.4. Aberdeen & Northern Marts stress the importance of these smaller centres: "[they] form a vital part of the business and ensure a complete professional service, including valuation and compensation claims, is available locally in all areas" (ANM Group Ltd, 1994, p.5). In addition to the

weekly sales, seasonal sales also take place at Bettyhill, Dunbeath and Kingussie (Highland Region) and at Aboyne and Tomintoul (Grampian Region) (Figure 5.1). Table 5.4 shows that TAC hosts the majority of livestock sales for Aberdeen & Northern Marts in Grampian Region with a variety of sales held on four days of the week. In addition to the weekly sales held at all branches of Aberdeen & Northern Marts, 'Special Sales' also take place frequently. Table 5.5 and 5.6 show the percentage of 'Special Sales' taking place at each of the Aberdeen & Northern Marts situated in Grampian Region for the period July-December 1994 and January-June 1995 respectively.

Table 5.4 Weekly sales held at Aberdeen & Northern Marts (Grampian only)

MART	DAY	TIME	SALES
TAC	Monday	11.00 a.m.	Prime Cattle
	Tuesday	1.00 a.m.	Prime Sheep
		9.30 a.m.	"Electronic Sale" of Prime Cattle followed by Prime Sheep
	Thursday	10.30 a.m.	Dairy Cattle, Young Calves, Weaned Calves and Stirks
		11.00 a.m.	Young and Store Pigs, Cull Sows and Boars
		10.00 a.m.	Poultry
		11.30 a.m.	Prime Cattle
	Friday	1.30 p.m.	Prime Sheep
		10.00 a.m.	Store Cattle
		10.30 a.m.	Beef Breeding Cattle
		10.30 a.m.	Store and Breeding Sheep
		11.45 a.m.	Young Bulls, Prime Cattle, Farrow Cows and Bulls
		9.30 a.m.	"Electronic Sale" of Prime Pigs
	12 noon	"Electronic Sale" of Feed Grain	
Cornhill	Thursday	10.30 a.m.	Prime Sheep followed by Prime Cattle
Elgin	Monday	10.30 a.m.	Store Cattle
	Tuesday	10.30 a.m.	Prime Sheep, Prime Cattle and Farrow Cows
Laurencekirk	Monday	12.30 a.m.	Prime Sheep
		2.00 p.m.	Prime Cattle and Farrow Cows
Maud	Wednesday	10.00 a.m.	Prime Cattle
		12 noon	Prime Sheep

Table 5.5 Special sales held at Aberdeen & Northern Marts (Grampian only): July-December 1994

Mart	No. of Special Sales	% of Scottish Sales
Aboyne	7	8
Cornhill	7	8
Laurencekirk	7	8
Maud	10	12
TAC	50	60
Tomintoul	3	4
TOTAL	84	100

Source: Derived from Aberdeen & Northern Marts Sales Schedule (All Marts) July-December 1995

**Table 5.6 Special sales held at Aberdeen & Northern Marts (Grampian only):
January-June 1995**

Mart	No. of Special Sales	% of Special Sales
Aboyne	0	0
Cornhill	5	9
Laurencekirk	8	14
Maud	16	29
TAC	27	48
Tomintoul	0	0
TOTAL	56	100

Source: Derived from Aberdeen & Northern Marts Sales Schedule (All Marts)
January-June 1995

Tables 5.5 and 5.6 clearly show that of the 'Special Sales' taking place at the Aberdeen & Northern Marts based in Grampian Region over the year July 1994-June 1995, a large percentage took place at TAC: 60% between July and December 1994 and 48% between January and June 1995. The mart at Maud was the next busiest with 12% and 29% during July-December 1994 and January-June 1995 respectively. It is therefore appropriate to examine in more detail the importance of Thainstone Agricultural Centre to farmers in Grampian Region.

(c) Thainstone Agricultural Centre

Thainstone Agricultural Centre (TAC) was built in 1990 at a cost of over £5 million. By 1994 its stock holding facilities had to be extended. It is the most modern auction mart complex in Europe, incorporating several innovative design features to assist in the efficient and stress-free handling of livestock⁷.

Although Aberdeen & Northern Marts emphasise the importance of the smaller satellite centres, they do encourage the farmers in the region to come to TAC to sell their livestock, otherwise these farmers lose out. For example, it was found that cull cows were mostly being bought by agents at the branch centres during the week. These agents were then selling the same livestock at the Friday sales at TAC for a higher price (interview with General Manager of TAC, 22/2/95). Although Aberdeen & Northern Marts were collecting commission twice in one week on the same animals, they believe that their primary concern has to be with the well-being of their farmers.

Aberdeen & Northern Marts covers the north and north-east of Scotland, incorporating both Highland and Grampian Regions, but the main buying agents are to be found at TAC. At the smaller branch marts, the trading area tends to be within a short radius of the centre. In contrast, many producers come to TAC from within all

the districts in Grampian (including Elgin and south of Laurencekirk), from Tayside Region, and from Highland Region, including Inverness and the Black Isle (see Figure 3.1). Producers also come from as far afield as the Isle of Skye, the Isle of Lewis and the Orkney and Shetland Islands - in 1994 over 50,000 sheep from the Shetland Islands and over 18,000 cattle from Orkney were sold at TAC. Producers are therefore clearly identifying TAC as the central agricultural trading place in the north and north-east of Scotland.

Friday is the busiest day of the week at TAC when hundreds of farmers gather from miles around for the weekly sales (see Table 5.4) and also for the 'special sales' which often take place on a Friday too. It is however estimated that perhaps up to two-thirds of those attending TAC on a Friday are neither buying nor selling (interview with General Manager of TAC, 22/2/95). In addition to being an auction mart, the centre is also a place where farmers from Grampian and the surrounding regions meet socially on a regular basis. TAC also contains a number of banks, insurers, accountancy firms, feed stores, outdoor clothing stockists, a branch of the NFUS, and so on. It also has a restaurant, snack bar and lounge bar.

Table 5.7 below shows the total value of livestock sold at the Aberdeen & Northern Marts (both Grampian and Highland Regions) for the year January-December 1994. The importance of the mart at TAC is further emphasised in these figures.

Table 5.7 Value of sales of livestock sold at Aberdeen & Northern Marts January-December 1994

Mart	Total Value of Livestock ¹ Sold in 1994 (£Million)	% of Total Sales
TAC	76.5 ²	67.9
Elgin	10.5 ³	9.3
Maud	10.3 ⁴	9.2
Laurencekirk	5.0	4.4
Caithness	4.4	3.9
Cornhill	4.4	3.9
Electronic Marketing	1.1	1.0
Aboyne	0.4	0.4
TOTAL	112.6	100

Source: Aberdeen & Northern Marts, Summary Sheets January-December 1994.

Notes: ¹Livestock includes the following:

Store Cattle
Store and Breeding Sheep
Breeding Cattle (Commercial)
Breeding Cattle (Pedigree)*
Dairy Cattle*

Prime Cattle
Prime Sheep
Farrow Cows
Pigs
Lamb Marketing

(* Sold at TAC only)

²This figure includes 'Special Sales' and 'Seasonal Sales' which took place at Tomintoul.

³This figure includes 'Seasonal Sales' which took place at Bettyhill.

⁴This figure includes 'Seasonal Sales' which took place at Dunbeath and Kingussie.

As shown in Table 5.7 above, the total value of livestock sold at the various Aberdeen & Northern Marts in 1994 was £112.6 million. Of this total, £76.5 million (approximately 68%) was made up from livestock sold at TAC. This represents a 2% increase from the previous year - January to December 1993 - when total value of livestock sold at TAC amounted to £75.0 million. Indeed summary accounts show that since 1984 the TAC share of the total value of livestock has increased each year. Furthermore, the number of livestock units sold at TAC in 1994 increased by 3.5% from the previous year, although the total value of livestock sold increased by only 2%. At the same time the number of livestock units sold overall by Aberdeen & Northern Marts was decreasing each year. These changes and the possible reasons for such changes are discussed more in Chapter 7 (Section 7.4.8).

From the above discussion and data presented, it is seen that TAC is the main trading place for farmers in the Region. It is therefore clear that in undertaking the survey at the various marts in the Region, with the bulk of the questionnaires completed at TAC, it has been possible to get a more representative sample of farmers in the region than would have been possible if a postal questionnaire had been employed. The quota sampling method used does, of course, introduce bias as it is only those farmers who attend the various marts that have a chance of being chosen for the sample. Even of those who do attend the different marts, there is no guarantee that they were in attendance when the data collection at the different marts took place.

5.3.6 Non-Response

It is sometimes argued that quota sampling helps bypass the problem of non-response (Kalton, 1983). What actually happens with this method is that an alternative respondent can replace an unwilling or unavailable respondent. During data collection for this research, no effort was made to calculate non-response rates, but it is estimated that approximately one in four people were unwilling or unable to participate. Some of those approached did not fall into the category of 'farmer' in Grampian Region. Others were farmers, but had travelled to the marts from other regions such as Highland or Tayside. Some were lorry drivers, livestock agents, or there as a friend of a farmer, and one was even a farmer's gardener. Of the Grampian farmers who did not respond, the main reason given was that they were

on their way to the next sale where they were either buying or selling and had no time to stop.

5.3.7 Rapport

Rapport is the term given to an effective field relationship. It is argued that rapport is a “necessary but not sufficient condition for obtaining good data” (Glesne and Peshkin, 1992, p. 94). In order to establish rapport, researchers are expected to have a sense of humour, know the language of the respondents, wear appropriate clothes, and maintain confidentiality. The researcher can to some extent, manipulate these personal characteristics. Appropriate dress was an important factor to consider when undertaking this survey. It was important that the interviewer did not look like a salesperson requiring more than participation in a five minute questionnaire. It should be noted that the interviewer changed in terms of dress between the pilot study and the main survey in order to ‘fit in’ with the target population. Informal, casual dress was deemed appropriate. Regarding confidentiality, at no point was the respondent required to give his name, address or telephone number. Even then, a small percentage of respondents were rather suspicious of what the information was to be used for and needed to be assured of the confidentiality of the survey.

Rapport was established with most respondents at the very start of the survey. On only two occasions did those being interviewed break off the interview before it was completed.

5.3.8 Summary

This chapter has explained the methodology chosen to collect the data to assess the impact of CAP reform on farmers in Grampian Region and to evaluate the extent of diversification. The data was collected by means of a face-to-face questionnaire: 227 farmers were surveyed through this method accounting for 5% of the region’s occupiers. The next stage in the empirical fieldwork involves the coding, analysis and presentation of the data collected. The following chapter therefore presents the results of this survey, describing and discussing the results obtained from implementing the above methodology, although much of the discussion on the results relating to farm diversification occurs in Chapter 8.

Endnotes

¹ Hinde (1991), Dale *et al.* (1988) and Hakim (1982) provide some useful insights into secondary analysis.

² See de Vaus (1994) for a summary of the advantages and disadvantages of the various methods of administering questionnaires.

³ For a fuller discussion of the advantages and disadvantages of face-to-face interviews, as well as postal and telephone questionnaires, see May (1993), Fowler (1988) and Moser and Kalton (1971).

⁴ See Moser and Kalton (1971) who list several advantages to sampling.

⁵ The other main mart in Grampian is Huntly Auction Mart Plc. The General Manager was approached and a request made for information on the Group such as Annual Reports and any available summary statistics. Such information was denied on the basis of confidentiality.

⁶ See, for example, the Group Report and Accounts for 1995 (ANM Group Ltd, 1995).

⁷ TAC's modern, heated and well-serviced premises also host the Thainstone Specialist Auctions division of the ANM Group. The aim of this division is to develop and promote the non-agricultural auction activities of the group. Sales of vehicles, household goods, furniture and antiques take place weekly. Specialist sales, clearance and liquidation sales also take place.

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Chapter 6

Survey of the Impact of the 1992 CAP Reforms on Agriculture in Grampian Region: Data Analysis

This chapter presents the results of the survey of Grampian farmers undertaken in order to investigate aspects of the hypothesis informing this research as stated in Chapter 1. Data analysis was performed using a range of SPSS operations (SPSS Inc., 1993) which focused largely upon frequency distributions (Section 6.1), two way cross-tabulations (Section 6.2) and significance tests conducted according to data type (Section 6.3). Particular use was made of three way cross-tabulation exercises to explore relationships between variables.

6.1 Frequencies

The total number of respondents to the questionnaire was 227. The following statistical analysis shows how each question was answered and the different percentages relating to each.

6.1.1 Farm Details

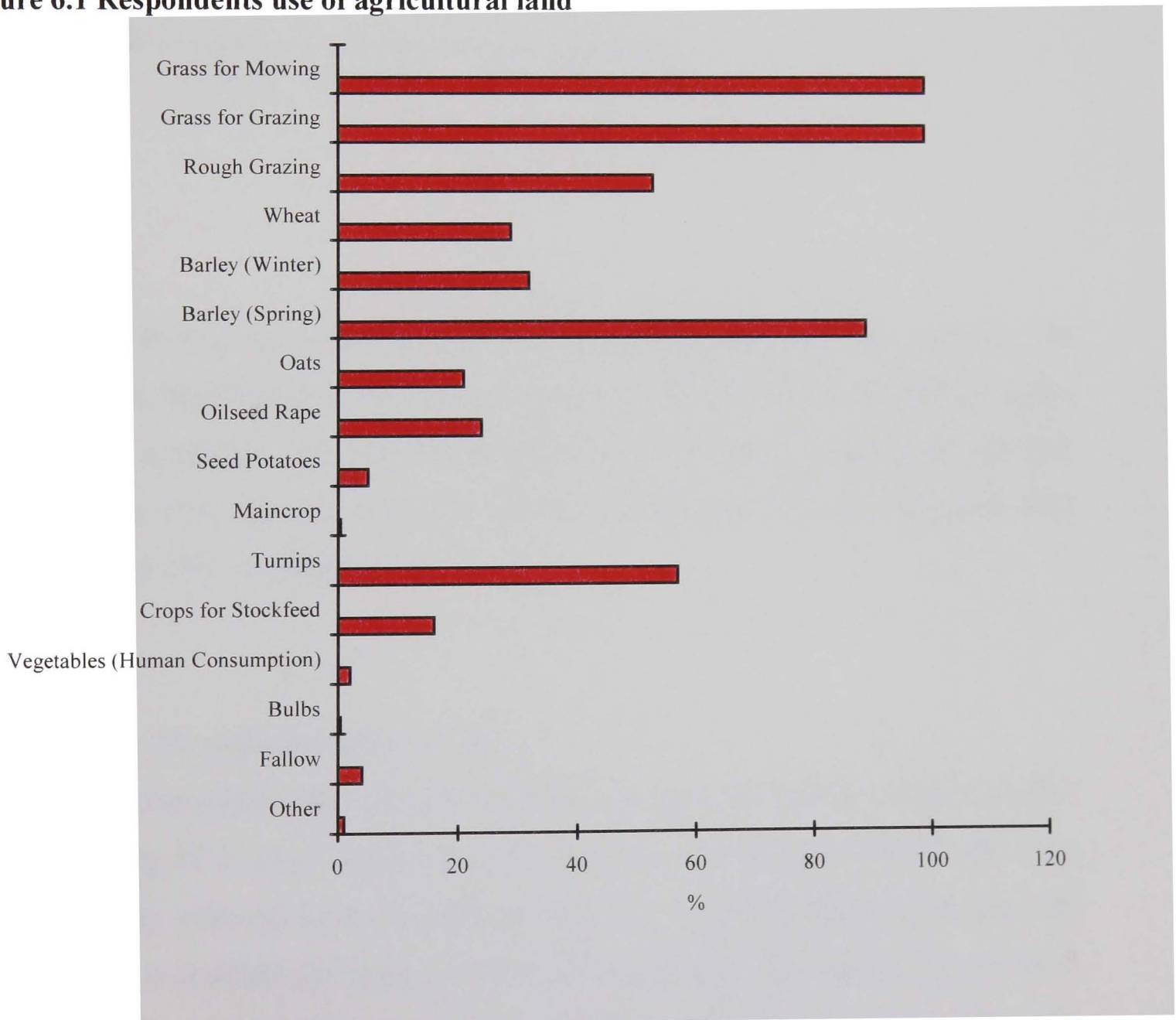
(a) Description of the Sample

The majority of respondents, that is 84%, were full-time occupiers; 15% were part-time occupiers; and, 1% classed themselves under the heading of 'Other' (stating that they were semi-retired, assistant farmer or hobby farmer). Most respondents (52%) were aged between 36-55 years, 31% were 56 years and over, while only 18% of those interviewed were aged 18-35 years. 55% of respondents owned farms of between 20-199 acres while 43% owned farms of 200 or more acres. Only 2% of respondents owned farms of up to 20 acres. 60% of respondents had farms located in lowland Grampian while 37% had upland farms. The remaining 3% had farms in both upland and lowland Grampian. A 'typical' farmer from this sample was therefore found to be a full-time occupier, aged between 36-55 years and owning a farm of between 20-199 acres located in lowland Grampian.

(b) Agricultural Land

Figure 6.1 below shows how respondents used their agricultural land at the time of interview. They were given a list from which to choose what applied to them including 'Other' where they could specify something not listed. Virtually all respondents had grass for mowing and grass for grazing (99% for each), while 53% used the land for rough grazing; 4% said land was fallow. The most popular crops grown by respondents were spring barley (89%) and winter barley (32%). Wheat was grown by 29% of respondents, oilseed rape by 24% and oats by 21%. 57% of respondents grew turnips, 5% seed potatoes and 2% grew vegetables for human consumption. Crops for stock feed were grown by 16% of respondents. Only one respondent grew maincrop (0.4%) and one grew bulbs (0.4%). No one grew peas, triticale, earlyware or soft fruit. The 'Other' option was chosen by 1% who said they grew beans.

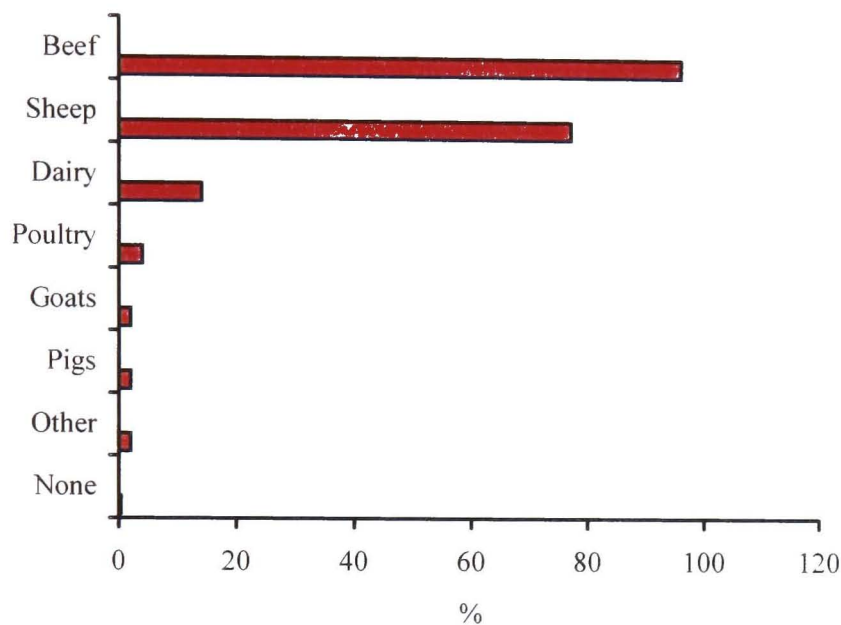
Figure 6.1 Respondents use of agricultural land



(c) Livestock

Figure 6.2 shows the different forms of livestock raised by respondents. The majority of respondents raised beef cattle (96%) and sheep (77%). Dairy cattle were reared by 14%. Only a few respondents had pigs (1%), poultry (4%), or goats (2%). In the category 'Other' 1% said they raised horses. Only one respondent (0.4%) reared no livestock.

Figure 6.2 Livestock reared by respondents



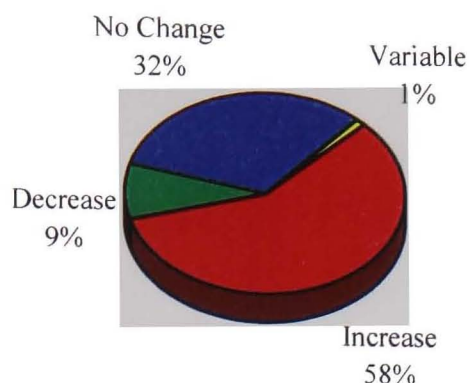
(d) Set-aside

When asked if they had land set-aside 40% of respondents said they did not. Of those that did, 92% had land set-aside in rotation; 4% had non-rotational set-aside; and 4% had rotational *and* non-rotational set-aside. Of the respondents who had land set-aside 35% had less than 15% set-aside, 49% had 15% set-aside and 16% had more than 15% set-aside.

6.1.2 Cereals, Oilseeds and Protein Crops

Only 8% of respondents did not grow cereals, oilseeds and protein crops (COPs). The remaining 92% were asked how their income derived from COPs had been affected by the relevant CAP changes (taking into account compensation paid for the reduction in institutional prices and for land set-aside). The results are shown in Figure 6.3 below, where 58% of respondents said incomes had increased while 32% said incomes had not really changed. Only 9% said that incomes had decreased while 1% said variable changes had taken place.

Figure 6.3 Income changes for respondents with COPs



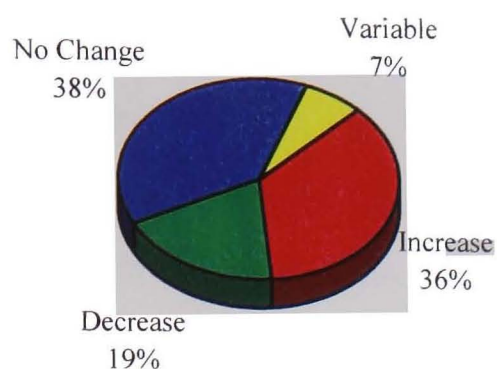
When asked if they had moved away from cereals to oilseed rape in recent years, 89% of respondents with COPs said they had not. Those who said they had were asked to state their reasons for doing so. The remaining 11% stated that they had moved from cereals to oilseed rape for the following reasons (some respondents gave more than one reason):

- | | |
|--------------------------------|-----|
| 1. financially more profitable | 78% |
| 2. guaranteed income | 22% |
| 3. less risk involved | 9% |
| 4. good subsidies | 4% |

6.1.3 Beef

Those respondents who had beef cattle (96%) were asked how income derived from beef production had been affected by the 15% reduction in the beef support price (taking into account compensation paid through increases in the suckler cow premium and the special beef premium). Figure 6.4 shows the responses to this question with 38% of respondents reporting no real change in their income while 36% reported increased incomes. Incomes had decreased for 19% and changes had been variable for the remaining 7%.

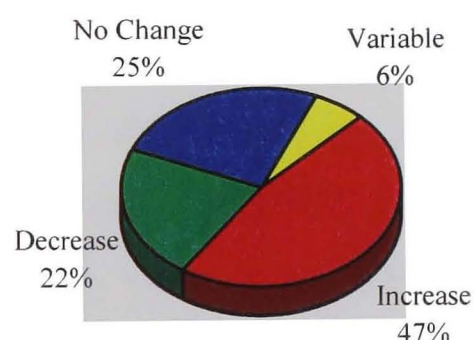
Figure 6.4 Income changes for respondents with beef cattle



6.1.4 Dairy

Only 14% of respondents reared dairy cattle. They were asked how the reduction of milk quotas, the reduction in milk and butter prices and the abolition of the milk co-responsibility levy had affected their income derived from dairy production. It was found that incomes had increased for 47% of respondents while 25% reported no real change in income; incomes had decreased for 22% of respondents while 6% said variable changes had taken place (see Figure 6.5). Those respondents who said incomes had decreased were then asked if this decrease had been balanced by the decrease in feeding costs - 100% said 'Yes', incomes had been balanced by the decrease in feeding costs. This suggests that the dairy sector was not adversely affected by CAP reform, but rather that reform had a favourable impact on the majority of producers.

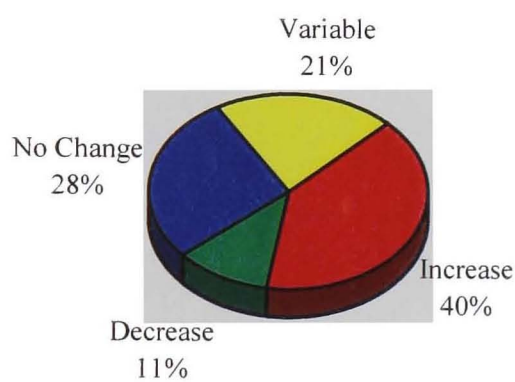
Figure 6.5 Income changes for respondents with dairy cattle



6.1.5 Sheep

Sheep were reared by 77% of respondents. When asked if their flock size had changed since 1991 (the year prior to the MacSharry reforms taking place) 48% of respondents said there had been no real change in the size of their flocks, 33% had seen an increase but 12% had seen a decrease. The remaining 7% said variable changes in flock sizes had taken place. Respondents were then asked how incomes derived from sheep farming had been affected by the relevant CAP changes (taking into account the fall in price of cereal-based foodstuffs as a result of CAP reform). Figure 6.6 shows that for 40% of respondents, sheep incomes had increased, 28% reported no real change in income, while 21% said variable changes had taken place. Only 11% of respondents said income from sheep farming had decreased as a result of CAP reform.

Figure 6.6 Income changes for respondents with sheep



6.1.6 Accompanying Measures

All respondents were asked if they had become involved in production techniques which protected the environment, landscape and natural resources. Only 14% of respondents said that they had. The remaining 86% of respondents were not involved in environmentally friendly production techniques of any kind. Those respondents who said 'Yes' were then asked to choose from a list the activity/activities they were involved in (the category 'Other' was also included where they could specify any activities they were involved in which were not covered in the list provided). The results were as follows:

1. environmentally friendly production methods	69%
2. environmental upkeep of abandoned land	34%
3. extensification by an increase in the area devoted to the present crop of livestock	25%
4. setting aside land for at least 20 years for environmental purposes	3%
5. organic farming	3%
6. other	0%

All respondents were also asked if they had considered afforestation and the development of forestry activities on farm as an alternative use of agricultural land. 22% of respondents said they had considered such activities; the remaining 78% had not.

6.1.7 Diversification

When asked if they had considered alternative ways of diversifying their farming operation, only 11% of all respondents said they had, leaving 89% whom had not considered diversification. Those who had diversified from traditional farming practices were asked to specify the new business activities they were involved in.

Ten different activities were recorded:

1. touring caravan/camping sites	32%
2. farm shop	16%
3. holiday cottages	12%
4. bed and breakfast	12%
5. sporting lets (shooting and fishing)	12%
6. golf course/driving range	8%
7. ostrich production	8%
8. organic farming	4%
9. chalets to let	4%
10. horse livery	4%

Table 6.1 Respondents' reasons for diversifying from traditional farm-based activities

REASONS	RESPONSES (%)
1. The economic outlook for most farm commodities is unfavourable.	4
2. There is a growing market for some alternative products and services from farms.	48
3. Spare buildings, rough land or water courses etc. were available to put to alternative use.	56
4. A new farm based venture was a challenge.	72
5. Advisory and financial support is available for diversifying from traditional farming.	44
6. Reform of the Common Agricultural Policy.	0

Respondents engaged in diversification were then asked to indicate their reason(s) for diversifying from traditional farm-based activities. A list was provided for them and the responses are shown in Table 6.1 above.

6.1.8 Other Consequences of the Reforms

(a) Labour

Respondents were asked how agricultural labour on their farms had been affected since 1992, that is, had the numbers of full-time workers, part-time workers, hired labour or family labour changed. Table 6.2 below shows the responses for each category of labour type: 31% of respondents had full-time workers on their farm; 9% had part-time workers; 6% had hired labour; and, 99% had family labour on the farm. In each category, the majority thus stated that agricultural labour on their farms had not really changed since 1992.

Table 6.2 Changes in agricultural labour on respondents' farms since 1992

Type of Labour	Increase (%)	Decrease (%)	No Change (%)	Not Applicable (%)
Full-time workers (31%)	3	3	25	69
Part-time workers (8%)	2	1	6	91
Hired labour (6%)	2	0	4	94
Family Labour (99%)	5	1	93	1

(b) Machinery

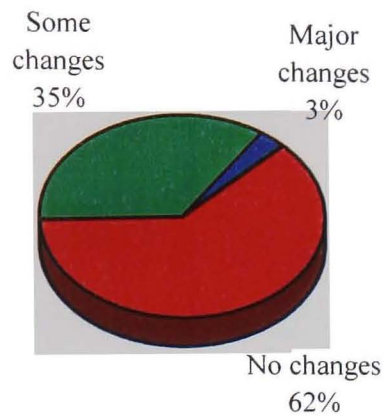
Respondents were asked if they had had to reduce the amount of machinery (capital equipment) owned or leased in order to cut fixed costs: 87% said they had not while 13% said they had. Those who had reduced capital equipment owned or leased were then asked if, as a result of having to do this, they had moved towards shared ownership of some machinery in an effort to spread costs over a number of holdings. To this 83% said they had not while 17% said they were involved in shared ownership of some equipment.

6.1.9 General

In the final section of the questionnaire respondents were asked four general-type questions. First, they were asked how extensive the changes were that they had had to make to their farming operation as a result of the CAP reform. As shown in

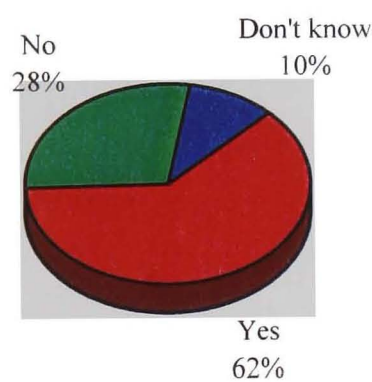
Figure 6.7, changes were not necessary for 62% of respondents, some changes were necessary for 35% of respondents, while only 3% stated that major changes were required.

Figure 6.7 Changes to respondents' farming operations



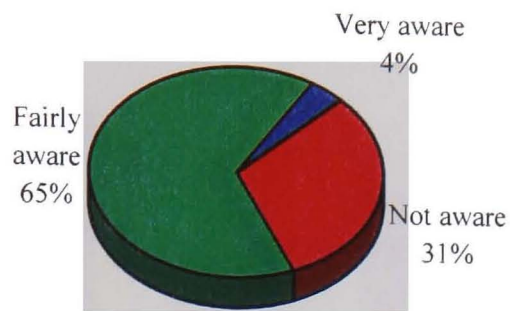
Secondly, respondents were asked if they believed that the new CAP had created a more stable environment for farmers to improve their competitiveness: 62% of respondents said 'Yes', 28% said 'No' and 10% said 'Don't know' (Figure 6.8).

Figure 6.8 CAP reform and a more stable environment



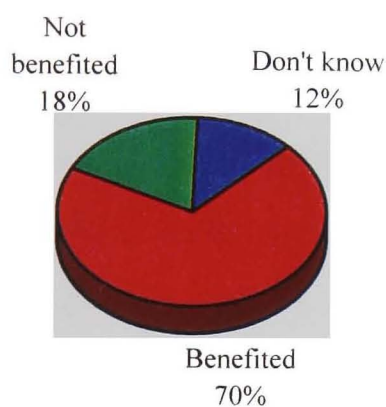
Thirdly, respondents were asked how aware they were of new developments in the CAP from Brussels: 31% said they were unaware, 65% said they were fairly aware and 4% said they were very aware of changes and new developments (Figure 6.9).

Figure 6.9 Respondents' levels of awareness of developments in the CAP



In the final question on the questionnaire, respondents were asked if, overall, they believed that they had benefited from the recent CAP reforms. A clear majority of 70% said they believed that they had benefited from the recent reforms, 18% said they believed they had not benefited and 12% said they were not sure (Figure 6.10).

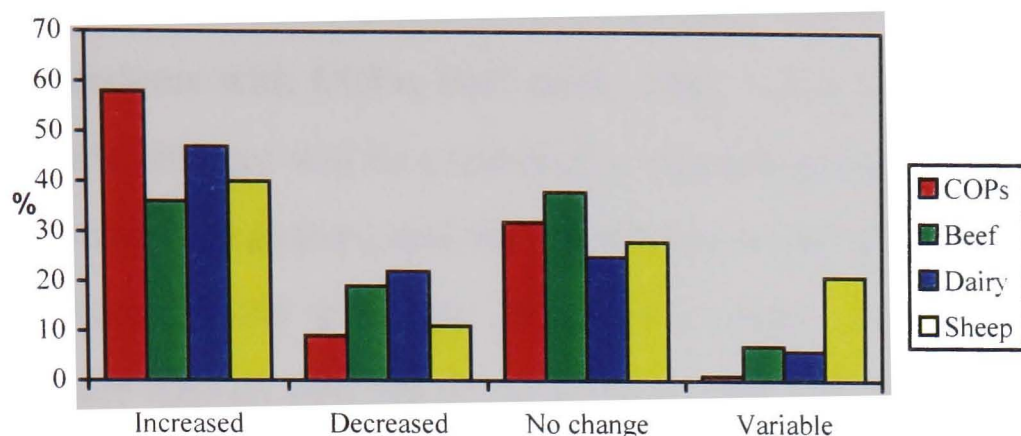
Figure 6.10 Respondents' benefiting from the CAP reforms



6.1.10 Summary

The above frequencies would appear to suggest that the majority of respondents fared well from the 1992 CAP reforms. The majority of respondents with COPs (58%) and the majority of dairy farmers (47%) said that their incomes had increased since CAP reforms took place. Although the majority of beef cattle farmers (38%) and sheep farmers (48%) said that incomes had not really changed, a much higher percentage said that incomes had increased rather than decreased. Figure 6.11 shows the percentage of respondents reporting increases, decreases, no changes or variable changes in each sector of COPs, beef production, dairy production and sheep production. For each it is clear that, overall, increases were much more prevalent than decreases.

Figure 6.11 Respondents' income changes for crops and livestock



The majority of all respondents (87%) also said that they had not had to reduce the amount of machinery owned or leased in order to cut fixed costs. Only 3% of all respondents said that major changes to their farming operation were required as a result of CAP reform while 62% said that no changes were required. Most (62%) felt that the CAP had created a more stable environment; 28% were in disagreement with this and 10% were unsure. And finally, 70% of all respondents believed that they had benefited from the 1992 CAP reforms; only 18% felt that they had not benefited from the reforms while 12% were unsure one way or another.

So who are the respondents who felt they did well out of CAP reform and who, on the other hand, are those who believe they did not benefit? Is there an underlying link between the two different types of respondents? In order to evaluate which respondents have said what, more in-depth analysis is required. This is undertaken in the following section using cross-tabulation.

6.2 Cross-Tabulation

This section cross-analyses the data presented in Section 6.1. Firstly, income changes for each sector of COPs and livestock are examined in relation to respondents' location and farm size. Secondly, the extent of changes to farming operations as a result of the reforms are examined in relation to location and farm size, livestock, set-aside, income changes, accompanying measures, diversification and changes to capital equipment. Thirdly, these same variables are examined in relation to whether respondents believed that overall they had benefited or not from the reforms.

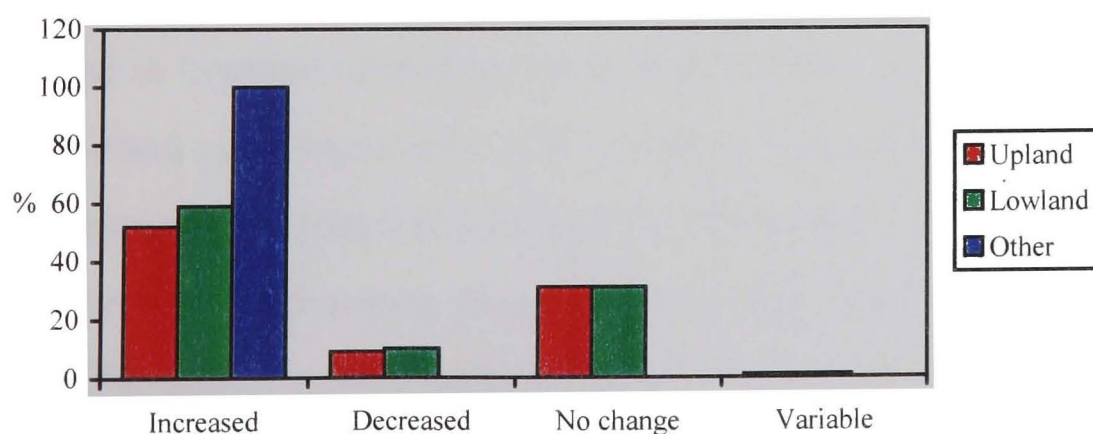
6.2.1 Location and Farm Size

This section examines how the MacSharry reforms of 1992 affected incomes for respondents with COPs, beef cattle, dairy cattle and sheep. For each sector these income changes will be examined in relation to the location of the farm, i.e. upland or lowland Grampian, and then in relation to the size of the farm, i.e. farms of up to 20 acres, 20-199 acres and 200 or more acres. It is commonly thought that those farmers who do best out of the CAP are large, lowland farmers and therefore those who do not fare well are the smaller, upland farmers. But as shown in Chapter 2, the MacSharry reforms were aimed at assisting the smaller, and by implication, poorer producers. The following in-depth analysis of responses to income changes will therefore provide some understanding of the types of respondents who have benefited or not benefited, in terms of location and farm size, as a result of the CAP reforms of 1992.

(a) Income from COPs

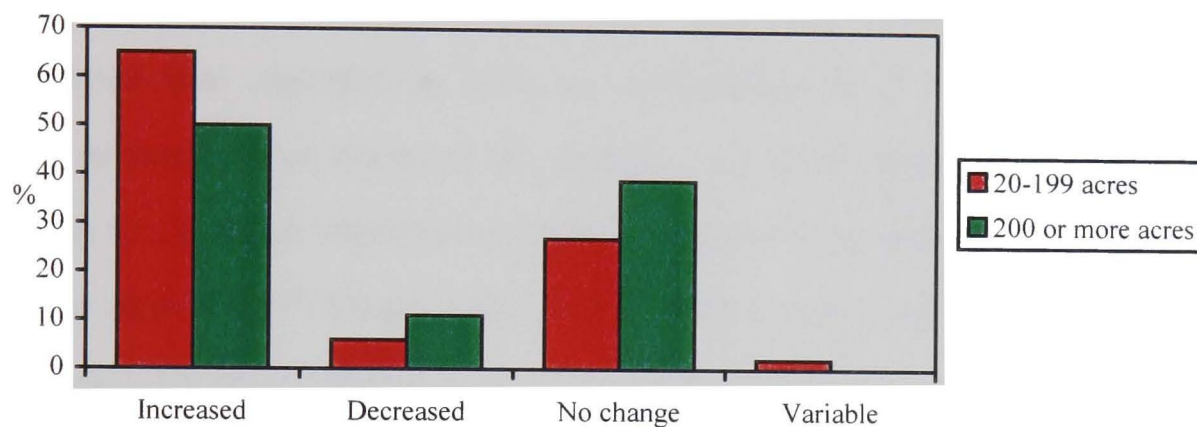
Of those respondents with COPs (92%) who said that their incomes from COPs had increased (58%), a slightly higher percentage were located in lowland Grampian (59%) than in upland Grampian (52%). However, there is little difference in the location of those whose incomes had decreased (10% in lowland Grampian and 9% in upland Grampian) while 31% in upland Grampian and 31% in lowland Grampian reported no real change. Only 1% for each farm location reported variable changes. All respondents in the category 'Other' (those with farms in both upland and lowland Grampian) reported increased incomes for production of COPs. These results are shown clearly in Figure 6.12 below.

Figure 6.12 Location of respondents with income changes for COPs



In looking at farm size, it was found that no respondents with farms of up to 20 acres farmed COPs. For those respondents with farms of 20-199 acres, 65% said incomes had increased compared to 50% of those with 200 or more acres. In terms of reported decreases in incomes, 6% were from respondents with 20-199 acres and 11% were from respondents with 200 or more acres. 27% of respondents with 20-199 acres and 39% of those with 200 or more acres reported no real change in income from COPs. Variable changes were only reported by 2% of respondents with 20-199 acres. These results are shown in Figure 6.13 below, indicating that income changes were more favourable for those respondents with smaller farms of less than 200 acres.

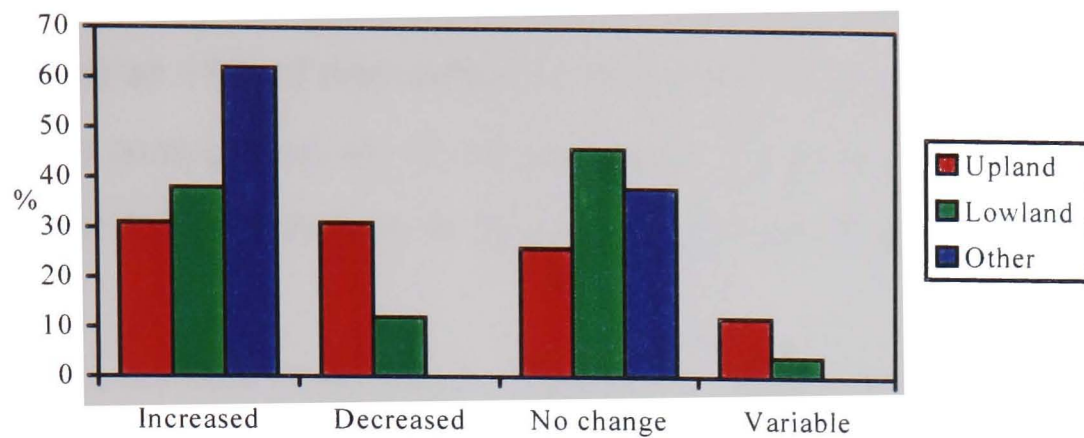
Figure 6.13 Farm size of respondents with income changes in COPs



(b) Income from beef production

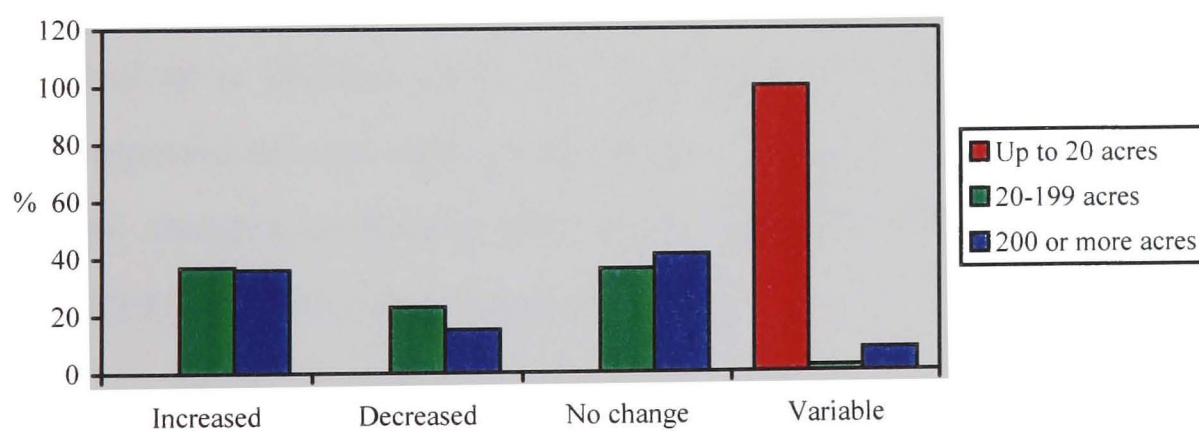
When income changes for the beef sector are compared with farm location, it would appear that a slightly larger percentage of respondents whose incomes from beef production have increased are located in lowland Grampian, that is 38% compared to 31% in upland Grampian. Differences are more striking for decreased incomes where 12% of lowland respondents reported decreased incomes compared to 31% of upland respondents. For those who reported no changes in income, 46% were located in lowland Grampian whereas 26% were located in upland Grampian. 4% of lowland respondents and 12% of upland respondents reported variable changes. For respondents with farms located in both upland and lowland Grampian ('Other' category) no respondents reported decreased incomes whereas incomes increased for 62% and remained unchanged for the remaining 38%. Figure 6.14 below presents these results more clearly.

Figure 6.14 Location of respondents with income changes for beef production



In comparing income changes with farm size, it is found that size makes little difference for respondents reporting increased incomes from beef production: 37% had a farm size of 20-199 acres while 36% had 200 or more acres. For decreased incomes, there is a bigger difference between respondents with 20-199 acres and those with 200 or more acres: 23% and 15% respectively. No real change in incomes was reported by 36% of respondents with 20-199 acres while 41% with 200 or more acres reported no change. All beef producing respondents with farms of up to 20 acres reported variable changes in incomes; 2% of those with 20-199 acres and 8% of those with 200 or more acres also reported variable changes. Figure 6.15 below shows how only slight comparisons occur between these different farm types.

Figure 6.15 Farm size of respondents with income changes for beef production

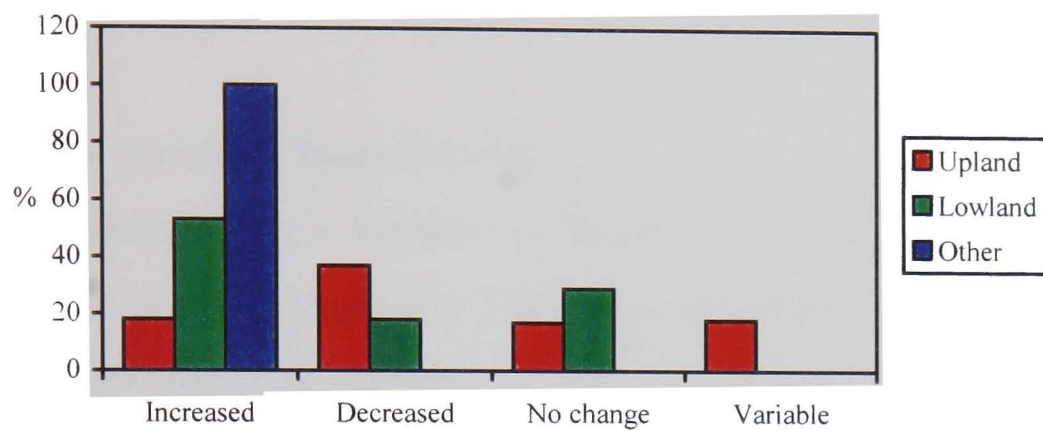


(c) Income from dairy production

In the dairy sector, it would appear that a much higher percentage of respondents in lowland Grampian have experienced increases in income compared to those in upland Grampian: 53% and 18% respectively. For income decreases in dairy production, the lowland respondents again fare better in that 18% report decreased

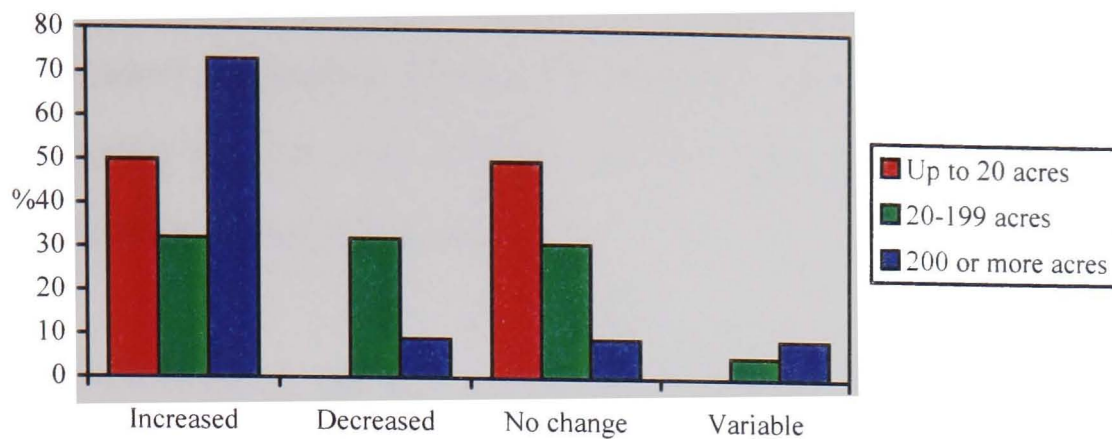
incomes compared to 37% in upland Grampian. 29% of lowland respondents and 17% of upland respondents' reports no real change in income while in upland Grampian 18% of respondents report variable changes compared to 0% in lowland. These comparisons are shown in Figure 6.16 below. All respondents in the category 'Other' (with farms in both locations) reported increased incomes.

Figure 6.16 Location of respondents with income changes for dairy production



In examining changes in dairy income in relation to respondents' farm size, it is found that a much higher percentage of farmers with 200 or more acres report increases in income (73%) compared to those with farms of 20-199 acres (32%). Similar differences exist for decreased incomes, with 9% of larger farmers reporting decreases compared to 32% of smaller farmers. No real change in incomes was reported by 31% of respondents with 20-199 acres and 9% of those with 200 or more acres; variable changes were reported by 5% of those with 20-199 acres and 5% of those with 200 or more acres. Of those respondents with dairy cattle on farms of up to 20 acres (only two respondents), 50% reported income increases and 50% reported no real changes in income. Figure 6.17 below shows these reported income changes, indicating that income changes were more favourable for those with farms of 200 or more acres.

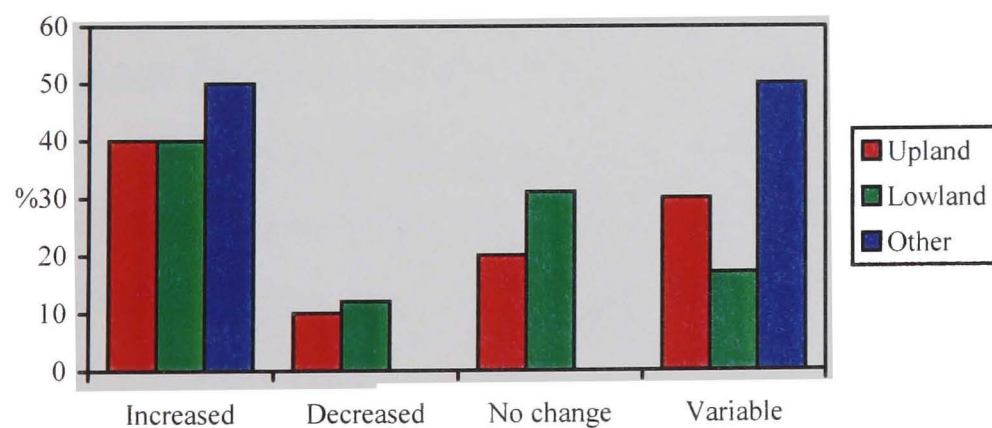
Figure 6.17 Farm size of respondents with income changes for dairy production



(d) Income from sheep farming

In relating income changes in sheep farming to farm location we find that the picture is not so clear-cut. The same percentage of respondents in both upland and lowland Grampian reported increased incomes (40%). Little difference again exists between those who reported decreases in income: 10% in upland Grampian and 12% in lowland Grampian. No real change in income is reported by 20% of upland farmers compared to 31% of lowland farmers; variable changes are 30% and 17% respectively. Of those respondents with farms located in both upland and lowland Grampian, 50% report increases and 50% report variable changes in incomes from sheep production. These results are shown in Figure 6.18 below, indicating that farm location does not really affect income changes for sheep producers .

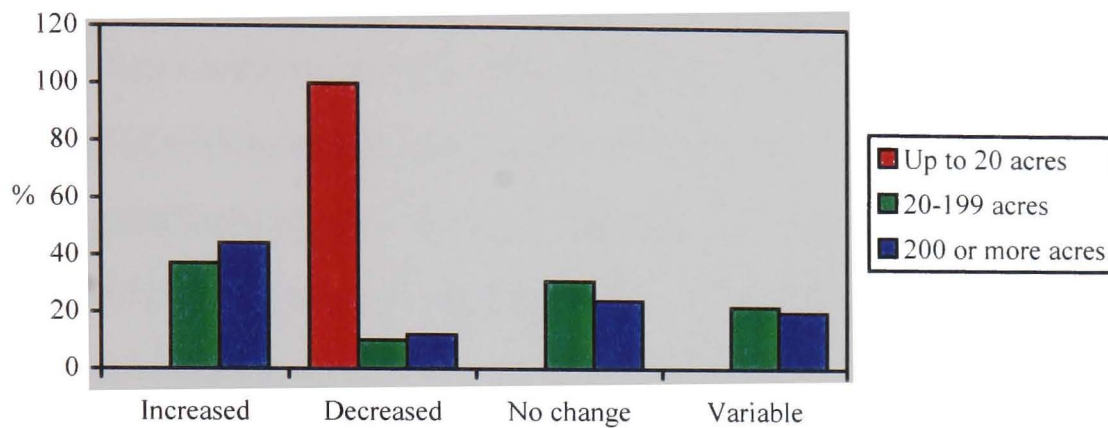
Figure 6.18 Location of respondents with income changes for sheep production



In examining farm size, increased incomes for sheep production are reported by more respondents in farms of 200 or more acres than by respondents in farms of 20-199 acres (44% and 37% respectively). A slightly higher percentage of larger farmers reported decreases in incomes than did smaller farmers (12% and 10% respectively). 22% of smaller farmers and 20% of larger farmers reported variable

changes, while 31% of smaller farmers and 24% of larger farmers reported no real change. Only one respondent with sheep had a farm size of up to 20 acres: this respondent reported a decrease in income. Figure 6.19 shows these comparisons, indicating that as with location above, farm size does not really affect income changes for sheep producers.

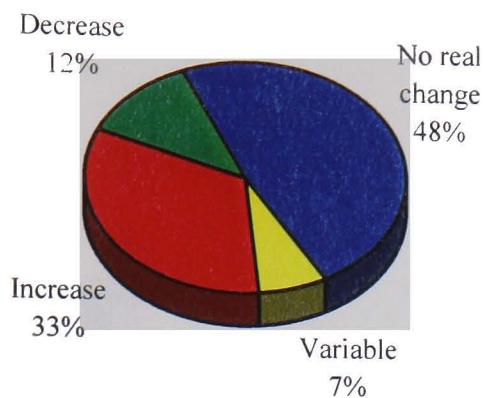
Figure 6.19 Farm size of respondents with income changes for sheep production



Respondents with sheep were also asked if their flock size had changed since 1991. However, due to the wording of the question, changes recorded by respondents cannot be directly related to recent CAP reforms. The reason for this is that factors other than CAP reform could have affected flock sizes. For example, one farmer when interviewed said that in the previous Spring a high percentage of his new lambs had died which meant that his flock was much smaller than anticipated by the following year. Another small farmer mentioned how, in one week, he lost 20 newborn lambs to a fox. Although the implication is there, the question does not specifically ask whether flock size changes were as a result of CAP reforms or not. This must therefore be taken into account in the following analysis of responses.

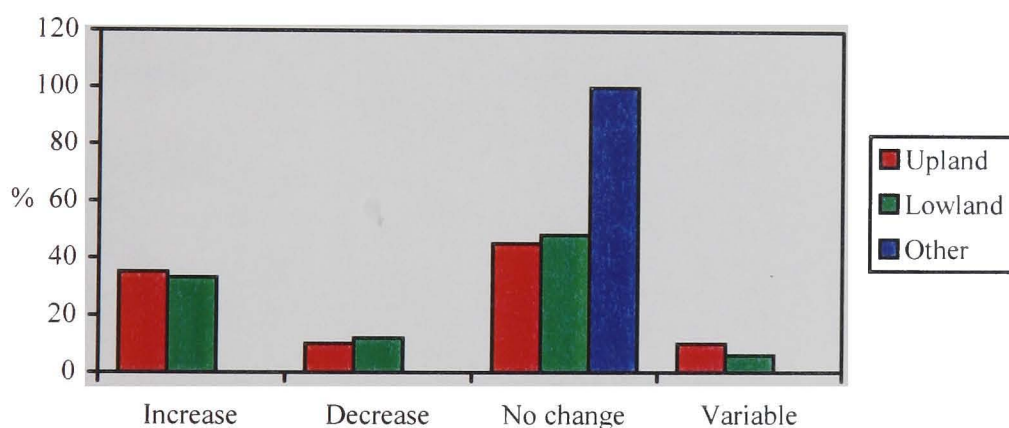
Most respondents reported that flock size had not really changed in recent years (48%). Flocks had increased for 33% of respondents but had decreased for 12% while 7% reported variable changes (Figure 6.20).

Figure 6.20 Changes in respondents' flock size since 1991



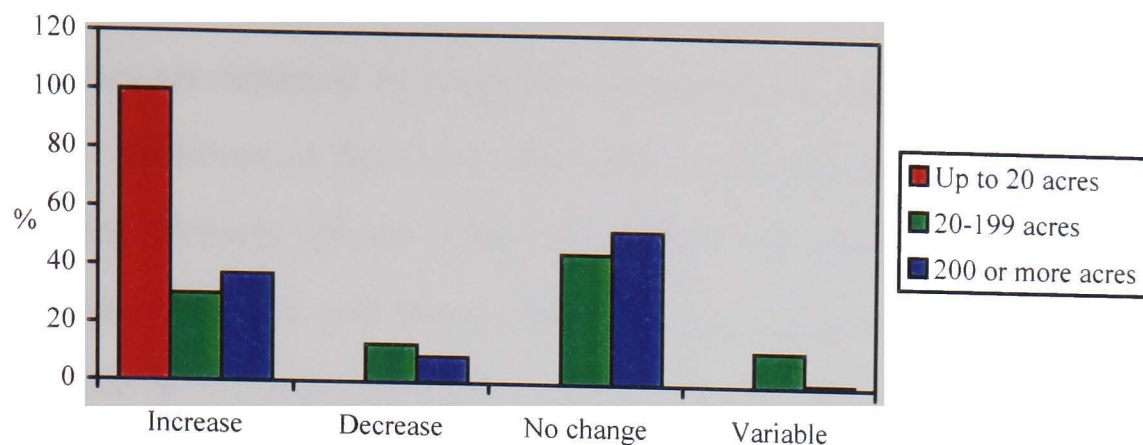
These changes in flock size will now be examined in relation to location and farm size. For location, there is little difference in the number of respondents in upland and lowland Grampian who report changes in flock size (Figure 6.21). The majority of respondents in each location reported no real change: 45% in upland Grampian and 48% in lowland Grampian. 35% of upland respondents and 33% of lowland respondents reported increased flock size while 10% in upland and 12% in lowland Grampian reported decreases. Finally, 10% of upland respondents and 6% of lowland respondents reported variable changes. Respondents with farms in both upland and lowland Grampian reported no real change in incomes.

Figure 6.21 Location of respondents with changes in flock size



For farm size, only one respondent with sheep had a farm of up to 20 acres, and reported an increase in flock size. Figure 6.22 below shows that a slightly higher percentage of respondents with farms of 200 or more acres (37%) reported increases in flock size than did those with farms of 20-199 acres (30%). In terms of reported decreases in flocks, 13% of respondents with 20-199 acres reported decreased flock size compared to 9% of those with 200 or more acres. Of respondents who reported no real change, 45% had farms of 20-199 and 53% had 200 or more acres. For variable changes in flock sizes, 12% were respondents with 20-199 acres compared to only 1% of those with 200 or more acres.

Figure 6.22 Farm size of respondents with changes in flock size



(e) Summary

A summary of the above cross-analysis is presented in Table 6.3 below. In terms of farm location, for COPs, beef and dairy producers, a higher percentage of those located in lowland Grampian reported increases in incomes. For sheep production the percentage of respondents who reported increases is the same for both locations. For decreased incomes in relation to location, a higher percentage of lowland farmers reported decreases for COPs and sheep production while a higher percentage of upland farmers reported decreases in the beef and dairy sectors.

Table 6.3 Income changes for COPs and livestock sectors in relation to location and farm size

Variable	Location ¹ (%)		Farm Size (%)	
	Upland	Lowland	<200 acres	>=200 acres
COPs Incomes				
Increased	52	59	65	50
Decreased	9	10	6	11
No Change	31	31	27	39
Variable	1	1	2	0
Beef Incomes				
Increased	31	38	37	36
Decreased	31	12	23	15
No Change	26	46	36	41
Variable	12	4	2	8
Dairy Incomes				
Increased	18	53	32	73
Decreased	37	18	32	9
No Change	17	29	31	9
Variable	18	0	5	5
Sheep Incomes				
Increased	40	40	37	44
Decreased	10	12	10	12
No Change	20	31	22	20
Variable	30	17	31	24

Note: ¹ Data for 'Other' (farms in both locations) has not been included, as the numbers are so significantly small.

Therefore, overall, it would appear that in most sectors a higher incidence of income increases (although not always much higher) and a lower incidence of decreased incomes are reported by respondents who are located in lowland Grampian.

In terms of farm size, for COPs and beef production, a higher percentage of smaller farmers (those with less than 200 acres) reported increased incomes, whereas for dairy and sheep production, a higher percentage of larger farmers (200 or more acres) reported increases in incomes. For decreased incomes in relation to farm size, we find that more respondents with farms of up to 200 acres reported decreases for beef, dairy and sheep production. Only in the sheep sector did a higher percentage of those with 200 or more acres report decreases in incomes. Therefore, for farm size it would appear that, overall, a higher percentage of reported increases and a lower percentage of reported decreases are to be found for respondents with larger farms (200 or more acres).

The cross analysis undertaken in this section, a summary of which is presented in Table 6.2, therefore suggests that income changes have been more favourable for respondents based in lowland Grampian and with farms of 200 or more acres. Location and farm size do therefore affect whether respondents have benefited in income terms from recent CAP reforms or not.

6.2.2 Changes to Farming Operations

This section analyses responses to one of the questions in the final part of the questionnaire: *How extensive are the changes you have had to make to your farming operations as a result of the CAP reforms?* This again involves examining respondents' farm size and location, as well as types of livestock reared, whether land was set-aside or not (and if so how much), income changes for COPs and livestock sectors, respondents who considered environmental production techniques, afforestation and diversification, and whether capital equipment had to be reduced over recent years.

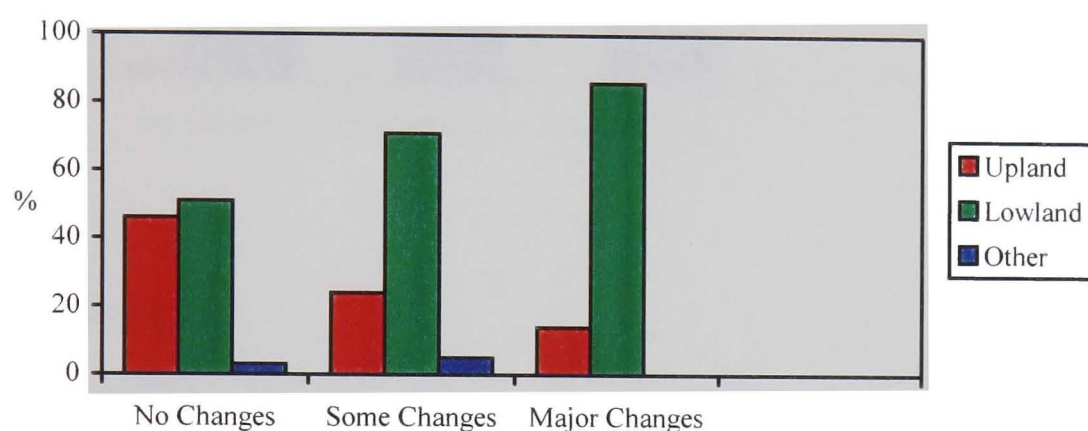
When asked how extensive the changes were that they had had to make to their farming operations as a result of recent CAP reforms, most respondents (62%) stated that they had been required to make no changes, 35% said some changes to farming operations were required while 3% said major changes were required. So who is this majority whose farming operations have not been affected by CAP reforms? Are they the respondents who reported increased incomes in the various

sectors examined above? Do factors like farm size and location play a part in their reasons for answering in a certain way? What forms of livestock do they rear? Do they have land set-aside and if so how much? This section attempts to answer these questions and to establish further whether certain factors determine who has been more likely to benefit from the CAP reforms of 1992.

(a) Farm location and farm size

Figures 6.23 and 6.24, respectively, show us clearly the location and size of respondents' farms in relation to changes to their farming operations.

Figure 6.23 Respondents' changes to farming operations in relation to location

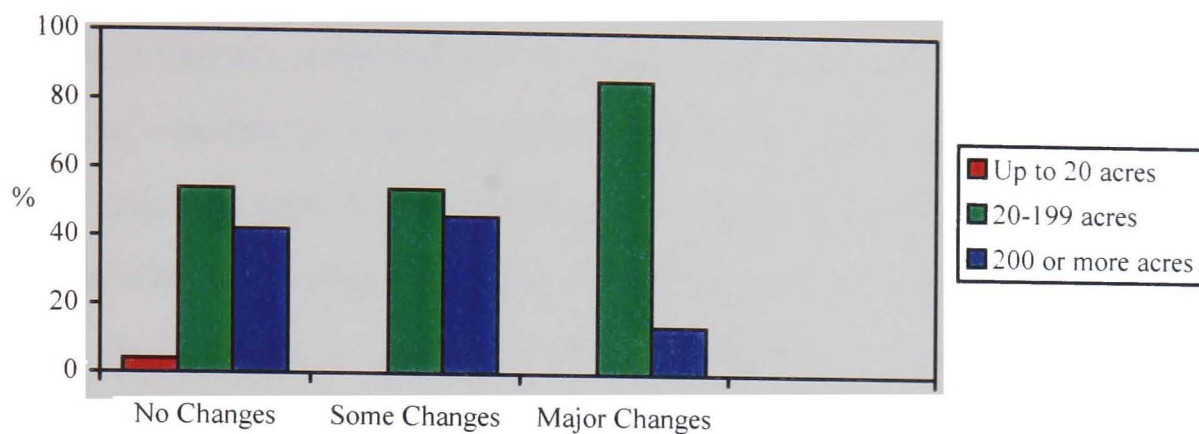


As shown by Figure 6.23, of those respondents who had to make major changes to farming operations, the majority were based in lowland Grampian (86%); 14% of upland respondents had to make major changes. Where some changes were required, the majority of respondents were again lowland farmers: 71% compared to 24% of upland respondents and 5% of those with farms in both locations. Where no changes were required, again the majority were lowland farmers: 51% compared to 46% of upland respondents and 3% of those with farms in both locations. This suggests that respondents in lowland Grampian felt the impact of CAP reform on their farming operations more so than their upland counterparts.

For farm size, Figure 6.24 shows that of those respondents who were required to make both major changes and some changes to their farming operations, the majority had farms of 20-199 acres: 86% and 54% respectively. Of respondents with 200 or more acres only 14% were required to make major changes while 46% were required to make some changes. This suggests that the farming operations of respondents with 20-199 acres were affected much more by CAP reform than for those respondents with larger farms. However, when we look at those who did not

have to make any changes to farming operations, we find that again the majority are those respondents with 20-199 acres (54% compared to 42% with farms of 200 or more acres and 4% of respondents with up to 20 acres). All respondents with farms up to 20 acres reported that they did not have to make changes to their farming operations.

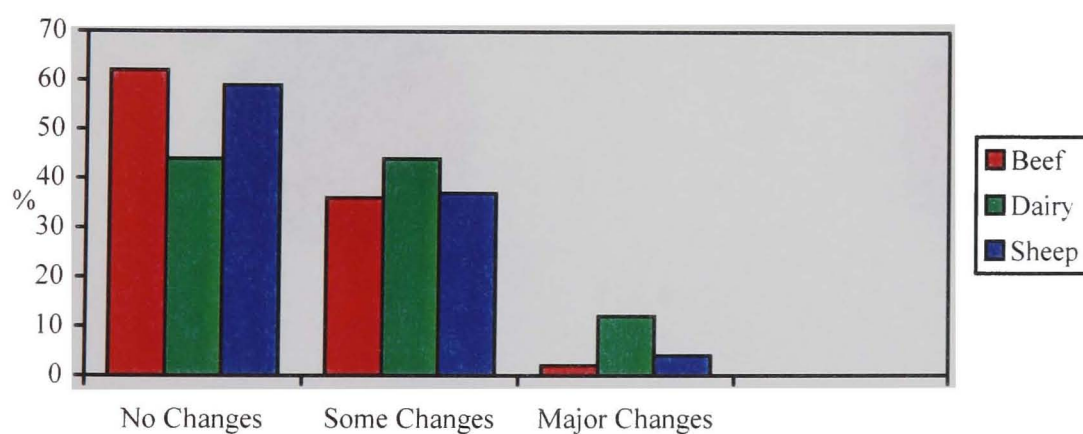
Figure 6.24 Respondents' changes to farming operations in relation to farm size



(b) Livestock

Respondents with different types of livestock will now be examined and an attempt made to determine if this has an impact on the extent of changes required in farming operations. The effect on respondents with different livestock is shown clearly in Figure 6.25 below.

Figure 6.25 Respondents' changes required for livestock sectors



For respondents who reared beef cattle, the majority of 62% said that no changes to farming operations were required, 36% said some changes were required, while only 2% said major changes were required. For dairy producers, 44% of respondents stated that no changes were required, 44% stated that they were required to make some changes, while the remaining 12% said major changes were required. For

respondents with sheep, a majority of 59% said that no changes to farming operations were required, 37% said some changes were required and 4% said major changes were required. Therefore, for each livestock sector, the majority stated that no real changes to farming operations were necessary, although it would appear that farming operations for beef and sheep producers were affected less than for dairy producers.

(c) Set-aside

For respondents who did not have land set-aside (40%), 77% said no changes to farming operations were necessary while the remaining 23% said some changes were required (see Figure 6.26). No respondents in this category were therefore required to make major changes to farming operations. In examining those who did have land set-aside (60% of all respondents) - rotational, non-rotational, and rotational *and* non-rotational set-aside - 52% said no changes were required, 43% were required to make some changes, while 5% were required to make major changes. Figures 6.26 and 6.27 below show the difference between respondents with and without set-aside land in terms of changes required to farming operations. Those respondents with no land set-aside were perhaps slightly more likely to feel the effects of reform on their farming operations.

Figure 6.26 Respondents with set-aside

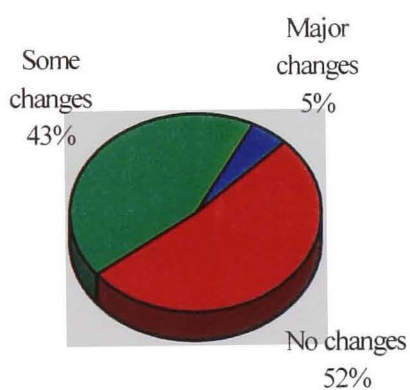
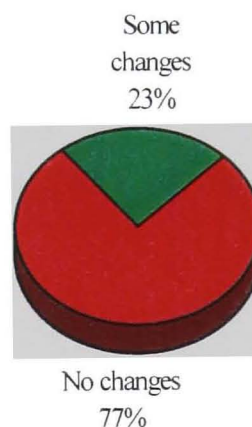


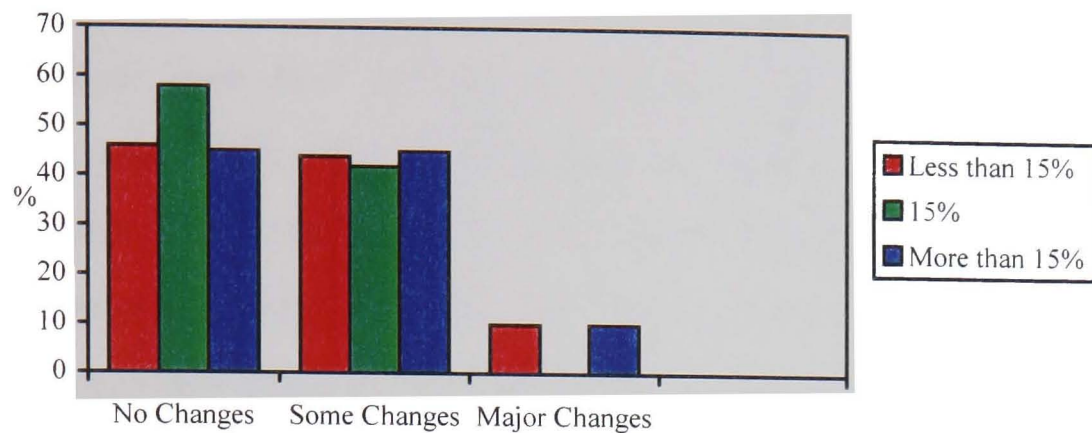
Figure 6.27 Respondents without set-aside



If respondents with land set-aside and the percentage of land that is set-aside is examined more closely, it is found that for those with less than 15% set-aside, 46% had no changes to make, 44% said some changes were required, while 10% said major changes were required. For those with 15% set-aside, 58% said no changes were necessary, while the remaining 42% said some changes were necessary. Finally, for those with more than 15% set-aside, 45% said no changes were

required, 45% said some changes were required, and the remaining 10% said major changes were required.

Figure 6.28 Respondents' required changes in relation to amount of set-aside

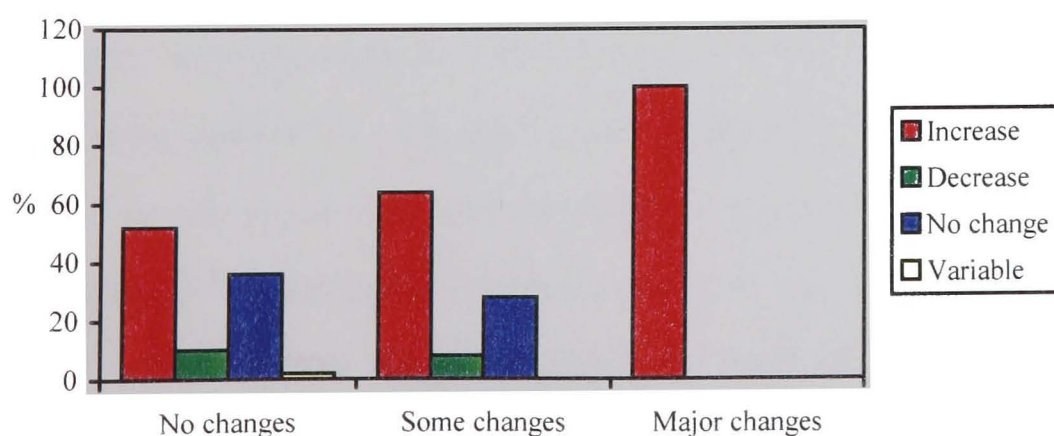


(d) Incomes

(i) COPs Income

Of all respondents with COPs (92%) the majority (59%) said that no changes to farming operations were required, 38% said some changes were required, while only 3% said major changes had been required. If we first examine those who said no changes were required, 52% were those who had reported increased incomes, 36% had reported no real change in income, 10% had reported decreased incomes and 2% had reported variable changes to income. For those who had been required to make some changes, the majority (64%) again reported increased incomes, 28% reported no real changes, while 8% reported decreased incomes. Finally, of those respondents with COPs who were required to make major changes to farming operations, it is surprising to find that all (100%) had stated that incomes in this sector had increased (see Figure 6.29).

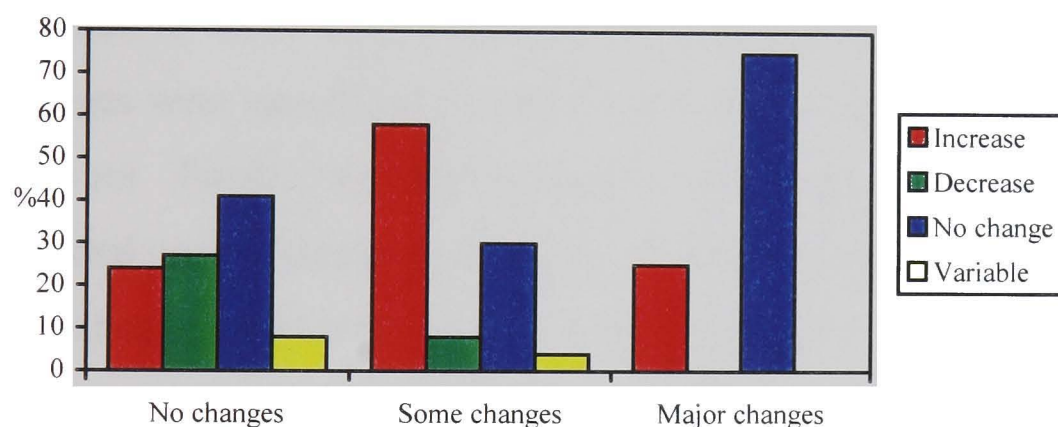
Figure 6.29 Changes to farming operations in relation to income changes for producers of COPs



(ii) Beef

Of the 96% of respondents who reared beef cattle, 62% said no changes to their farming operation had been necessary, 36% felt that some changes had been required, while only 2% said that major changes had been required (Figure 6.25). In examining those who said no changes were required, 41% had said that their incomes from beef production had not really changed, 27% said incomes had decreased, 24% said incomes had increased, while 8% said changes had been variable. For those requiring to make some changes to farming operations, 58% had reported increased incomes, 30% said incomes had not really changed, 8% said incomes had decreased, while 4% said changes had been variable. Finally, we find that as with COPs, for those who said major changes to farming operations had been necessary, none had reported decreased incomes, 75% said incomes had not changed and 25% said incomes had increased. These results can be seen more clearly in Figure 6.30 below.

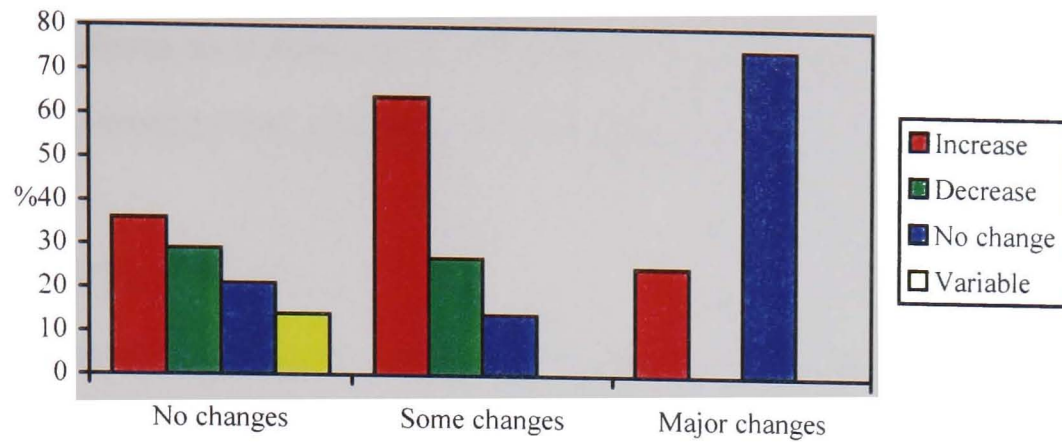
Figure 6.30 Changes to farming operations in relation to income changes for beef producers



(iii) Dairy

For dairy producers (only 14% of respondents), 44% said they had not been required to make changes to farming operations, 44% said some changes had been necessary while 12% said major changes were required (Figure 6.25). Of those who said no changes were necessary, 36% had reported increased incomes, 29% said incomes had decreased, 21% reported no real change, while 14% reported variable changes. Of those who said that some changes were necessary, 64% had reported increased incomes, 27% decreased incomes and 14% no real change in incomes. Finally, of those who felt that major changes had been required, 75% had reported no real change in income while 25% reported increased incomes (Figure 6.31).

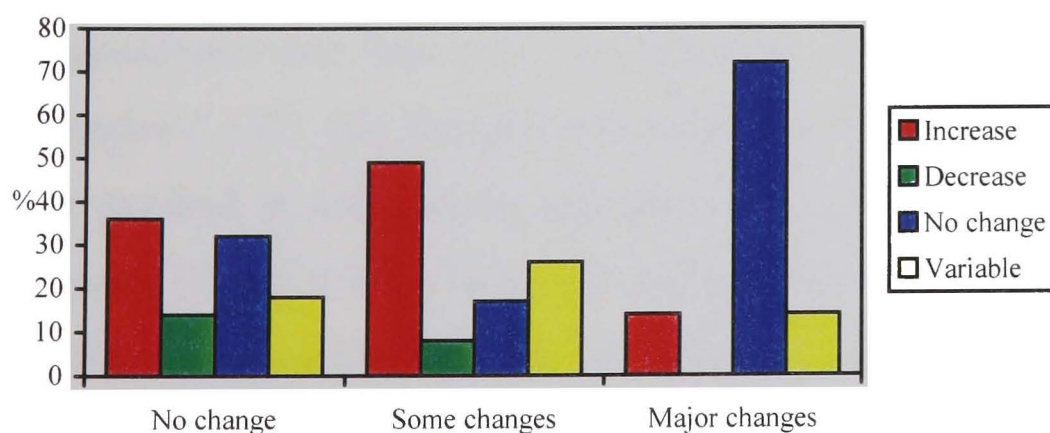
Figure 6.31 Changes to farming operations in relation to income changes for dairy producers



(iv) Sheep

Of those respondents with sheep (77%), 59% had been required to make no changes to farming operations, 37% were required to make some changes, while 4% felt that major changes had been necessary (Figure 6.25). If we now examine those respondents who said no changes had been necessary, we see that a slight majority of 36% had reported increased incomes, 32% reported no real changes, 18% said changes had been variable, while 14% said incomes had decreased. For those who required to make some changes, 49% had reported increased incomes, 26% said changes were variable, 17% reported no real change, while 8% reported decreased incomes. Finally, for those required to make major changes, 72% were those who reported no real change in incomes, while 14% said incomes had increased and 14% said changes had been variable. Again, as with the other livestock sectors, for major changes required, no respondents reported decreased incomes (Figure 6.32).

Figure 6.32 Changes to farming operations in relation to income changes for sheep farmers



(e) Accompanying Measures

In order to determine which respondents had to make changes (or not) to farming operations as a result of CAP reform, it is also necessary to examine those involved in environmental production techniques (EPTs) and afforestation.

(i) EPTs

Of those respondents involved in EPTs (14%) (listed above in Section 6.1.6), 47% were required to make some changes, 44% made no changes while 9% felt major changes had been necessary (Figure 6.33). In comparison, of those not involved in such measures, 65% had said no changes were necessary, 33% said some changes had been required, while only 2% were required to make major changes to farming operations (Figure 6.34). This suggests that CAP reform was perhaps more likely to have a noticeable effect on those involved in EPTs.

Figure 6.33 Respondents involved in EPTs

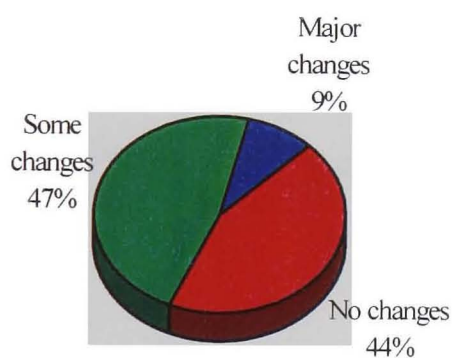
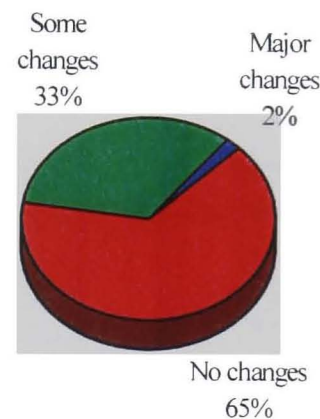


Figure 6.34 Respondents not involved in EPTs



(ii) Afforestation

Afforestation or the development of forestry activities on farm as an alternative use of agricultural land had been considered by 22% of all respondents. Of these respondents, 55% said farming operations had not changed, 33% felt that they had been required to make some changes, while 12% said major changes had been necessary (Figure 6.35). When we compare this to those respondents not involved in afforestation we find that 64% had not been required to make changes while 36% felt required to make some changes (Figure 6.36). As with EPTs above, this perhaps suggests that CAP reform may have had a more noticeable effect on respondents involved in afforestation.

Figure 6.35 Respondents who considered afforestation

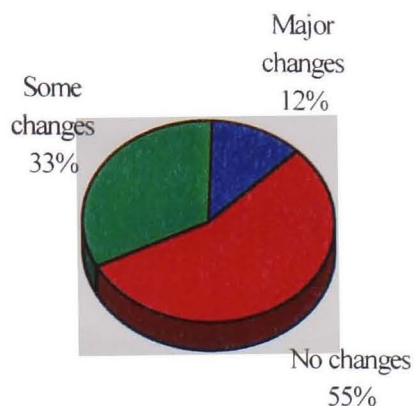
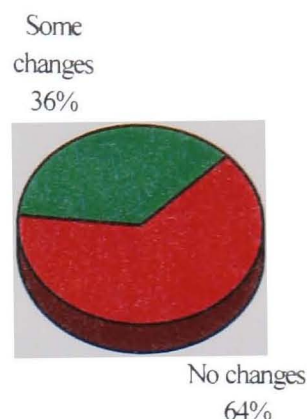


Figure 6.36 Respondents who did not consider afforestation



(f) Diversification

For respondents who had considered various methods of diversification (11%), 56% said some changes to farming operations had been necessary, while 44% felt no changes had been required (Figure 6.37). In contrast, for those not involved in diversification, 64% said no changes had been necessary, 33% felt some changes had been required, while 3% felt major changes were necessary (Figure 6.38). Diversification was not therefore a factor largely affected by CAP reform.

Figure 6.37 Respondents who considered diversification

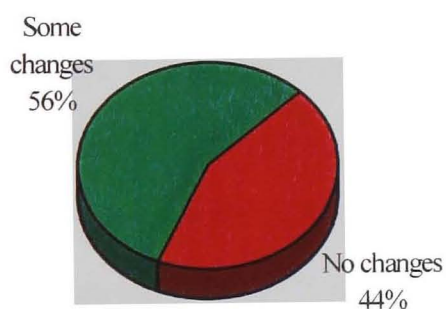
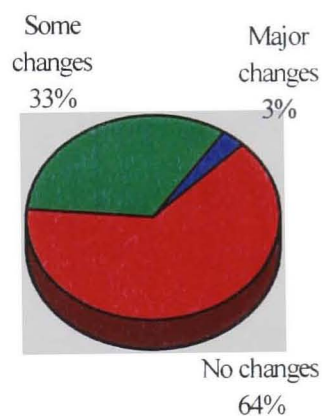


Figure 6.38 Respondents who did not consider diversification



(g) Other Consequences

In examining the level of changes to farming operations required as a result of CAP reform, the final factor to consider is whether the level of capital equipment owned or leased was reduced in order to cut fixed costs. Of those respondents who had said this was necessary (13%), 60% said they had not been required to make any changes to their operations, 23% said some changes had been necessary, while 17% said major changes had been required (Figure 6.39). For those who did not have to

reduce machinery only 1% said major changes to farming operations had been necessary. Of the remainder, 62% said no changes were necessary, and 37% said some changes had been required (Figure 6.40). This suggests that those respondents who had reduced machinery levels felt the impact of CAP reform more than those who had not found it necessary to make reductions.

Figure 6.39 Respondents who reduced machinery

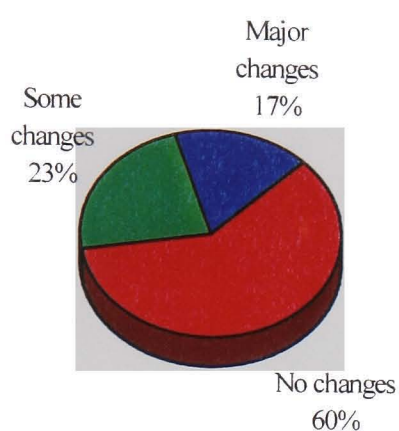
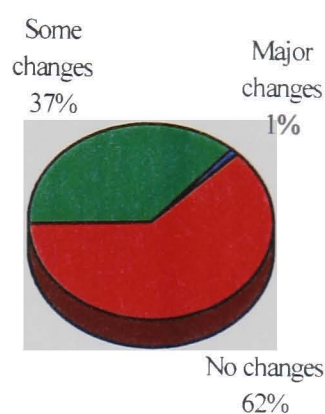


Figure 6.40 Respondents who did not reduce machinery



(h) Summary

The results of the cross-tabulation undertaken in this section are recorded in Table 6.3 below. Examining the extent of changes to farming operations as a result of CAP reform has not clearly clarified which respondents were more likely to have benefited or not from the reforms, but some observations can be made.

Of the small percentage of respondents (3%) who felt they were required to undertake major changes to their farming operations, the results suggest that they were mainly lowland farmers and those with farms of 20-199 acres. Although it may be expected that those claiming to have made major changes to farming operations may be those who have reported decreased incomes from crops and livestock, this is not the case here. Of those with COPs who said major changes to farming operations were required, **all** had seen income from COPs increase. For beef, dairy and sheep producers who said major changes were required, the majority said the income from their respective livestock had not changed. The majority of those whose incomes from beef, dairy and sheep had increased reported only some necessary changes (58%, 64% and 49% respectively).

The majority of respondents who said changes to farming operations were not necessary (62%) were sheep and beef producers. It is therefore surprising to note that the majority reporting no necessary changes were those whose beef

Table 6.4 Changes required to respondents' farming operations as a result of CAP reform

Variable	No Changes Required (%)	Some Changes Required (%)	Major Changes Required (%)
Location			
Lowland	51	71	86
Upland	46	24	14
Other	3	5	0
Farm Size			
Up to 20 acres	4	0	0
20-199 acres	54	54	86
200 or more acres	42	46	14
Livestock			
Beef	62	36	2
Dairy	44	44	12
Sheep	59	37	4
Set-Aside			
No set-aside	77	23	0
Some set-aside	52	43	5
COPs Incomes			
Increased	52	64	100
Decreased	10	8	0
No change	36	28	0
Variable	2	0	0
Beef Incomes			
Increased	24	58	25
Decreased	27	8	0
No change	0	30	75
Variable	8	4	0
Dairy Incomes			
Increased	36	64	25
Decreased	29	27	0
No change	21	14	75
Variable	14	0	0
Sheep Incomes			
Increased	36	49	14
Decreased	14	8	0
No change	32	17	72
Variable	18	26	14
Accompanying Measures			
Involved in EPTs	44	47	9
Not involved in EPTs	65	33	2
Considered afforestation	55	33	12
Not considered afforestation	64	36	0
Diversification			
Considered	56	44	0
Not considered	64	33	3
Machinery			
Reduced levels	60	23	17
Not reduced levels	62	37	1
ALL RESPONDENTS	62	35	3

incomes had decreased (together with those whose COPs incomes had not changed and those not involved in EPTs). Furthermore, it is interesting to note that the majority of those **not** involved in set-aside, EPTs, afforestation or diversification, and who had **not** reduced machinery owned or leased were more likely to report no necessary changes to farming operations. At the same time, those who **were** involved in set-aside, EPTs and afforestation, and who **had** reduced machinery levels were more likely to report major changes to operations. However, overall, the majority of those engaged **and** not engaged in most of these activities felt that the reforms had not resulted in major changes to farming operations (Table 6.3).

Although some interesting observations are made from the above analysis, it is still difficult to clearly ascertain which respondents were more likely to have benefited from the CAP reforms. The following section therefore attempts to further determine who the respondents are who believed that they had or had not benefited from the reforms.

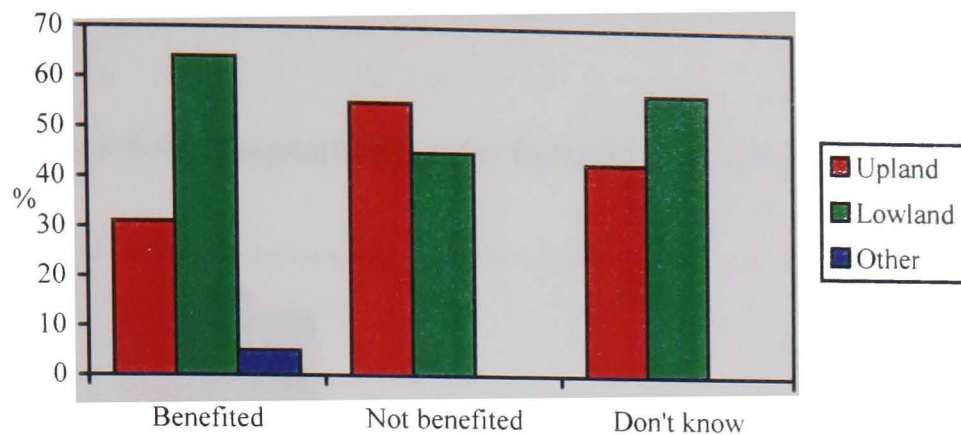
6.2.3 Benefited or not from CAP reforms?

70% of all respondents said they believed that they had benefited from the 1992 CAP reforms, 18% believed that they had not and 12% said they were unsure if they had or not. In order to establish who the respondents are who believed that they had or had not benefited from the reforms, the following analysis examines respondents' farm location and size, location, livestock, set-aside, income changes, accompanying measures, diversification and changes to capital equipment and farming operations.

(a) Farm Location and Farm Size

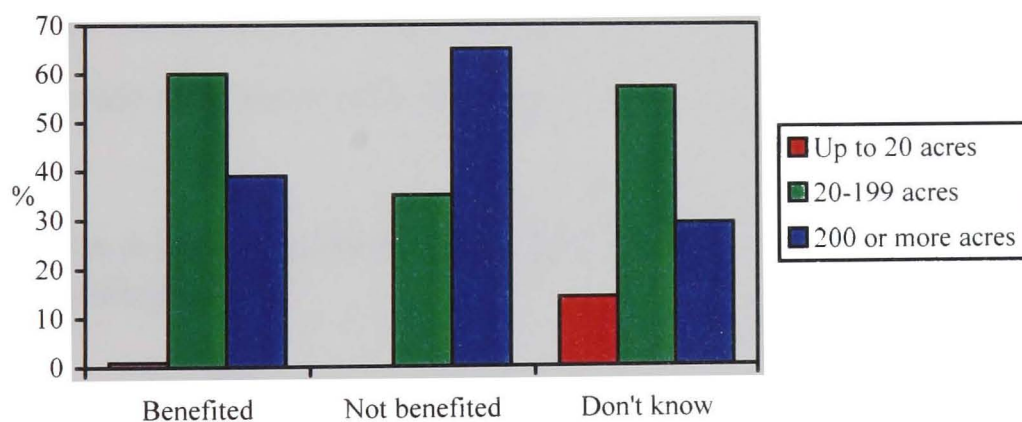
For location, Figure 6.41 below shows that the majority of lowland respondents said they believed they had benefited - 64% compared to 31% of upland respondents and 5% of 'other' respondents. In comparison, the majority of upland respondents said they believed they had not benefited - 55% compared to 45% of lowland respondents. Of those unsure whether they had benefited or not, 57% were lowland respondents with the remaining 43% upland respondents. This suggests that lowland farmers were more likely than their upland counterparts to have benefited from the reforms.

Figure 6.41 Respondents who benefited or not in relation to location



In terms of farm size (Figure 6.42), of those who believed that they had benefited, 60% had farms of 20-199 acres compared to 39% with farms of 200 or more acres and 1% with farms up to 20 acres. For those who believed that they had not benefited, 65% had farms of 200 or more acres compared to 35% with farms of 20-199 acres. For those who said they did not know whether they had benefited or not, 57% were of 20-199 acre farms, 29% of 200 or more acre farms and 14% of farms up to 20 acres. It would therefore appear that smaller farmers (with less than 200 acres) may have benefited more from the reforms than their larger counterparts (with 200 or more acres).

Figure 6.42 Respondents who benefited or not in relation to farm size

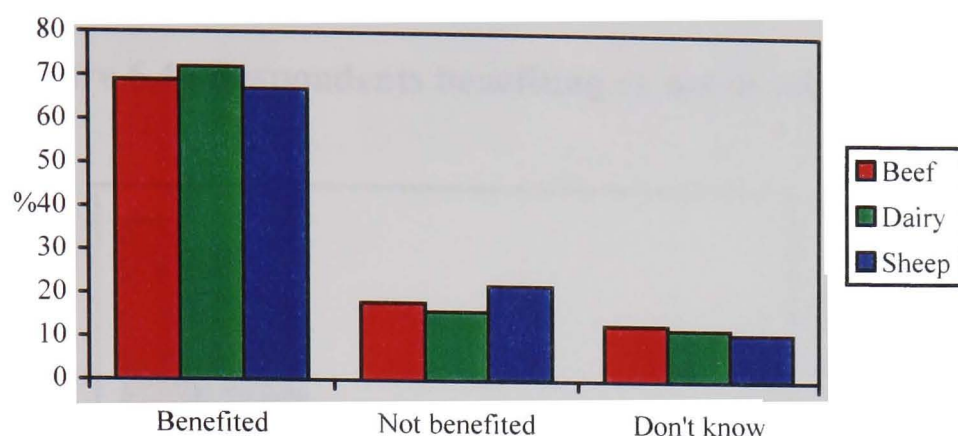


(b) Livestock

In examining those respondents who reared livestock, 69% of beef producers said they had benefited from the reforms, 18% said they had not, while 13% said they were unsure. For dairy cattle, 72% of respondents said they had benefited, 16% said they had not, while 12% said they did not know. For sheep, 67% said they had benefited, 22% said they had not, while 11% said they did not know. These results

are shown in Figure 6.43 below, clearly indicating that a high majority of all livestock producers felt they had benefited from the reforms.

Figure 6.43 Respondents who benefited or not for livestock sectors



(c) Land set-aside

Of the total number of respondents who had land set-aside (60%) (rotational, non-rotational, and both rotational *and* non rotational set-aside), the majority of 74% said they had benefited. Only 11% said that they had not benefited, while 15% said they were not sure (Figure 6.44). In examining those respondents who did not have land set-aside (40% of respondents), the majority, although lower at 63%, again said that they had benefited from the reforms: 22% said that they had not benefited, while 15% were not sure (see Figure 6.45). This suggests that farmers involved in set-aside may have benefited marginally more than those without land set-aside.

Figure 6.44 Respondents with set-aside benefiting or not

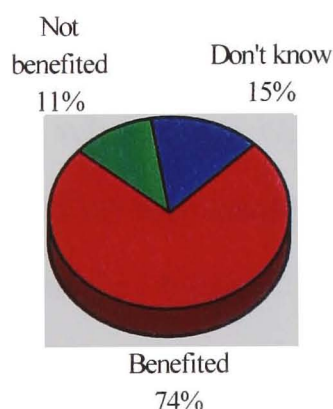
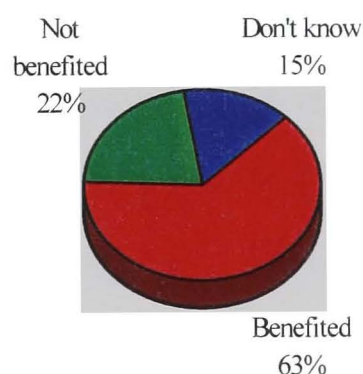


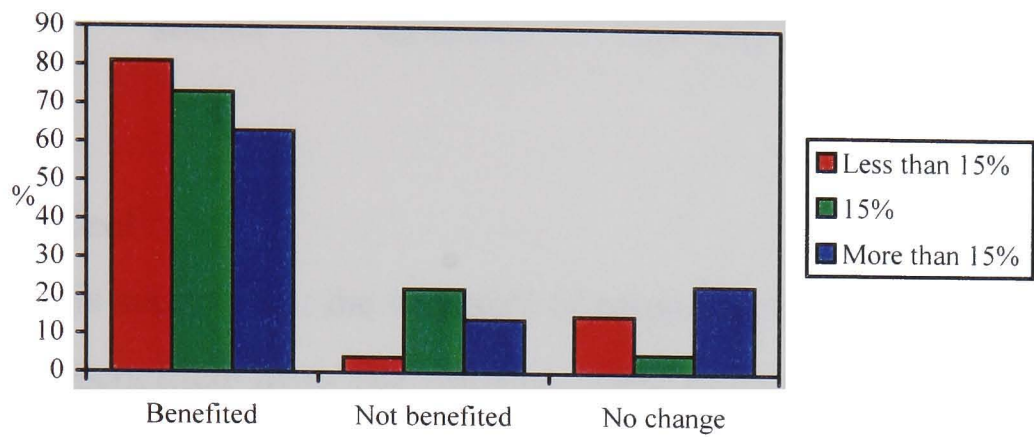
Figure 6.45 Respondents without set-aside benefiting or not



In examining the amount of land that respondents had set-aside, of those who had less than 15% set-aside, 81% said they had benefited, 15% said they were not sure, and only 4% said they had not benefited. Of those who had 15% set-aside, 73% said they had benefited, 22% said they had not, while only 5% said they were not

sure. Finally, of those who had more than 15% set-aside, 63% said they had benefited, 14% said they had not and 23% said they were not sure. These results, shown in Figure 6.46 below, suggest that those with less than 15% set-aside were perhaps slightly more likely to feel that they had benefited from the reforms.

Figure 6.46 Respondents benefiting or not in relation to amount set-aside

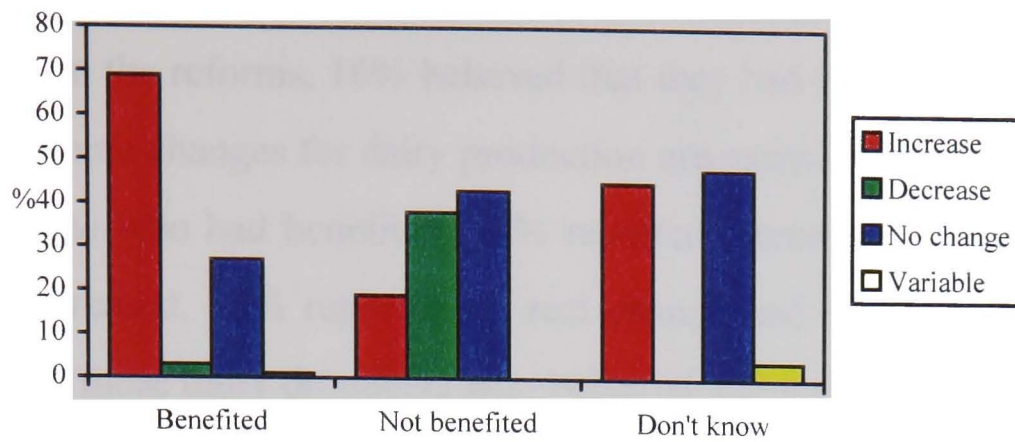


(d) Sector Incomes Changes

(i) COPs

A majority of 72% of respondents with COPs said they believed that they benefited from the CAP reforms compared to 18% who believed they had not benefited; 10% were unsure either way. In examining changes in incomes from COPs production a pattern emerges. Of those respondents with COPs who believed they had benefited from recent reforms, 69% had reported increased incomes from COPs, 27% reported no real change, 3% reported decreased incomes and 1% reported variable changes. In comparison, of those who believed that they had not benefited overall, only 19% reported increases in incomes from COPs, while 38% reported decreased incomes. The majority of 43% reported no real changes in incomes. For those respondents who stated that they were not sure whether they had benefited or not, 48% reported no real change in incomes, 45% said incomes had increased while 4% reported variable changes. These results are clearly shown in Figure 6.47 below.

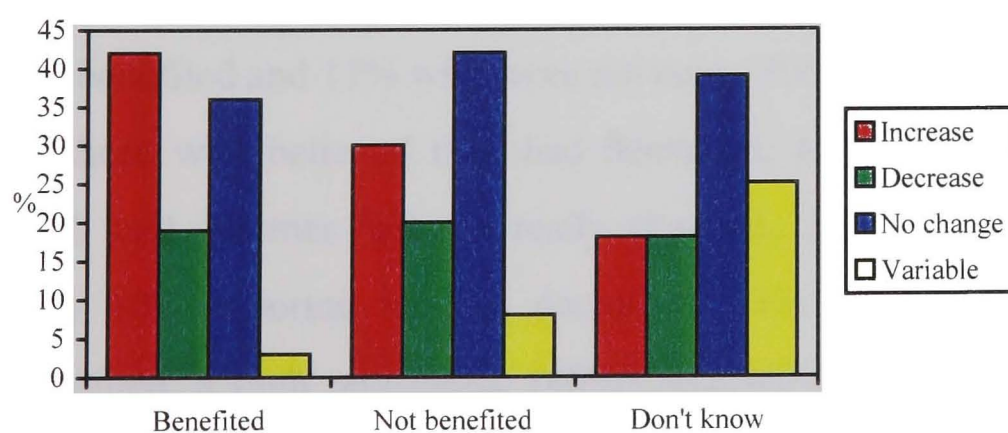
Figure 6.47 Benefited or not in relation to income changes for producers of COPs



(ii) Beef

In this sector also, the majority of respondents with beef cattle (69%) said that they had benefited from the reforms: 18% believed that they had not benefited while 13% were not sure. In examining changes in beef incomes since CAP reform it is found that for those respondents who believed that they had benefited, 42% reported increased incomes, 36% said there had been no real change, 19% said incomes had decreased, and 3% reported variable changes. For those who said that they had not benefited from the reforms, 42% said incomes had not really changed, 30% had reported increased incomes, 20% said incomes had decreased, while 8% said changes had been variable. Of those who were not sure whether they had benefited or not, 39% reported no real change in incomes, 25% reported variable changes and 18% each reported income increases and income decreases. These results are shown in Figure 6.48 below.

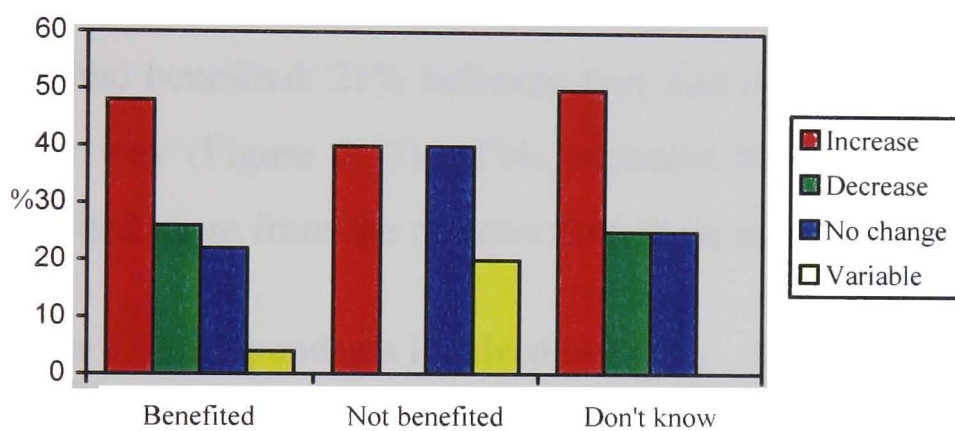
Figure 6.48 Benefited or not in relation to income changes for beef producers



(iii) Dairy

Of respondents with dairy cattle, 72% said that they believed that they had benefited from the reforms, 16% believed that they had not, while 12% were not sure. When income changes for dairy production are examined in more detail, it is found that of those who had benefited, 48% reported increased incomes, 26% said incomes had decreased, 22% reported no real change and 4% said changes had been variable. For those dairy producers who believed that they had not benefited from the reforms it is surprising to see that none of them report income decreases while 40% report increased incomes and 40% report no real change. Variable changes are reported by the remaining 20% of respondents with dairy cattle. Of those who were not sure if they had benefited or not, 50% reported increased incomes, and 25% each reported decreased incomes and no real changes in income (Figure 6.49).

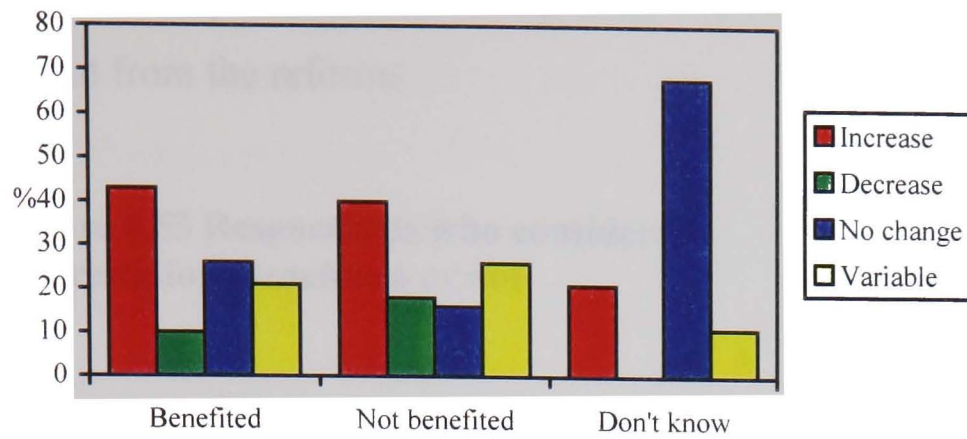
Figure 6.49 Benefited or not in relation to income changes for dairy producers



(iv) Sheep

The majority of respondents with sheep also said they believed they had benefited from recent CAP reforms, that is 67% compared to 22% who believed that they had not benefited and 11% who were not sure. For income changes in sheep production, of those who believed they had benefited, 43% had reported increased incomes, 26% said incomes had not really changed, 21% reported variable changes while only 10% reported income decreases. For those who believed they had not benefited, a high percentage (40%) reported income increases. Variable changes were reported by 26%, no real change by 16% and decreased incomes were reported by 18%. For those who were not sure whether they had benefited or not from the reforms, 68% reported no real change in income from sheep farming; increased incomes were reported by 21% and variable changes by 11% (see Figure 6.50).

Figure 6.50 Benefited or not in relation to income changes for sheep producers



(e) Accompanying Measures

(i) EPTs

Of respondents involved in EPTs (14%) (listed in Section 6.1.6), 88% said that they believed they had benefited from the reforms, 12% said they were not sure, while no respondents involved in EPTs said they had not benefited from the reforms (Figure 6.51). In comparison, of those respondents not involved in EPTs, 67% believed they had benefited, 21% believed they had not benefited, while 12% were not sure either way (Figure 6.52). This indicates that those involved in EPTs may have benefited more from the reforms than those not engaged in EPTs.

Figure 6.51 Respondents involved in EPTs, benefiting or not

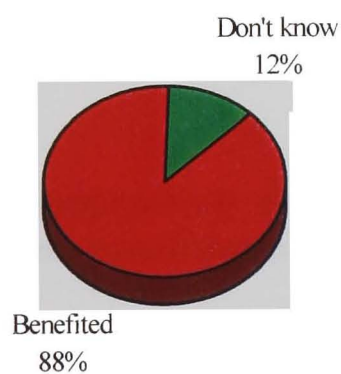
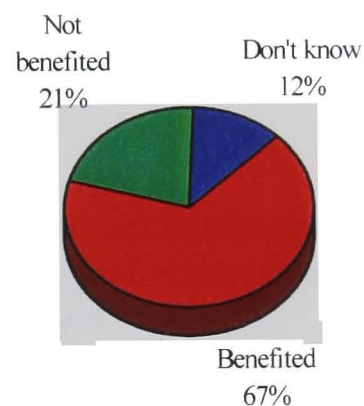


Figure 6.52 Respondents not involved in EPTs, benefiting or not



(ii) Afforestation

Of those who had considered afforestation (22%), a majority of 67% reported that they had benefited from the recent reforms, 22% said they had not benefited, while 11% were not sure whether they had benefited or not (Figure 6.53). The picture is only marginally different for those not involved in afforestation: 71% believed they had benefited, 16% believed they had not benefited, while 13% were not sure if they

had benefited or not (Figure 6.54). Being involved or not in afforestation does not therefore appear to dramatically affect whether respondents felt they had benefited or not from the reforms.

Figure 6.53 Respondents who considered afforestation, benefiting or not

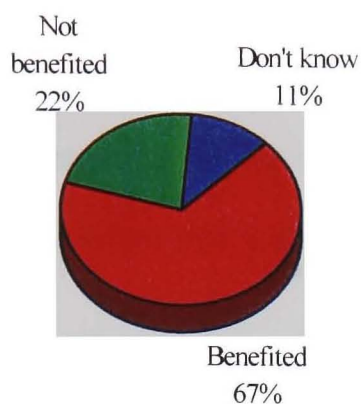
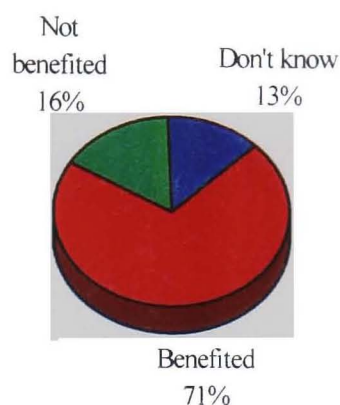


Figure 6.54 Respondents who did not consider afforestation, benefiting or not



(f) Diversification

For those respondents who had considered alternative ways of diversifying their farming operations (11%), 88% believed that they had benefited from the reforms, 8% were not sure if they had or not, while only 4% said they had not benefited from the reforms (Figure 6.55). For those who had not considered diversification 68% believed they had benefited while 19% believed they had not and 13% were not sure (Figure 6.56). This would suggest that those involved in diversification were more likely believe that they have benefited from the reforms.

Figure 6.55 Respondents who considered diversification, benefiting or not

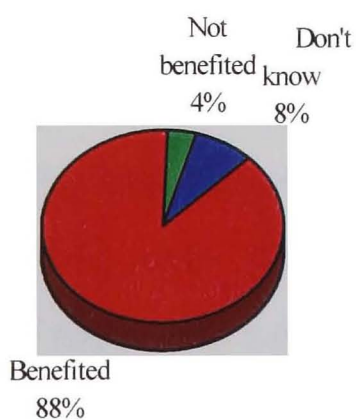
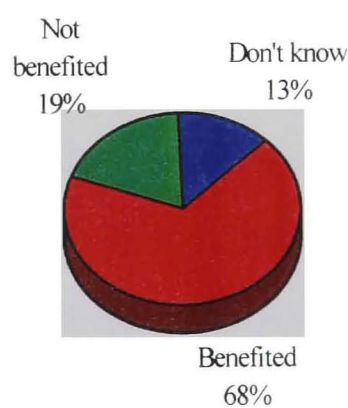


Figure 6.56 Respondents who did not consider diversification, benefiting or not



(g) Other consequences

(i) Changes to capital equipment

13% of all respondents stated that as a consequence of the reforms, reductions to capital equipment were necessary in order to cut costs. However, as many as 70% of those respondents believed that they had benefited from the reforms. Only 20% of those reducing equipment believed they had not benefited while 10% were unsure whether they had benefited or not (Figure 6.57). There is little change when this is compared with those who did not have to reduce capital equipment (Figure 6.58). The same percentage (70%) said that they had benefited, while 17% said they had not, and 13% were not sure either way.

Figure 6.57 Respondents who reduced machinery, benefiting or not

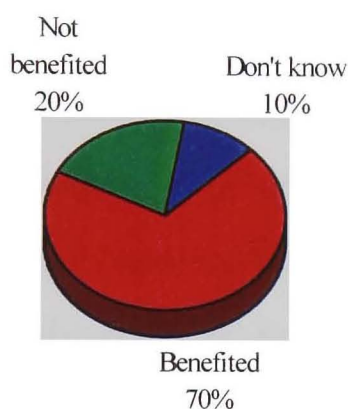
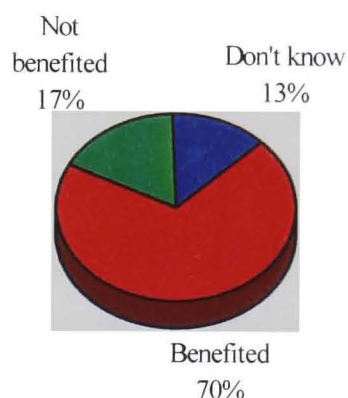


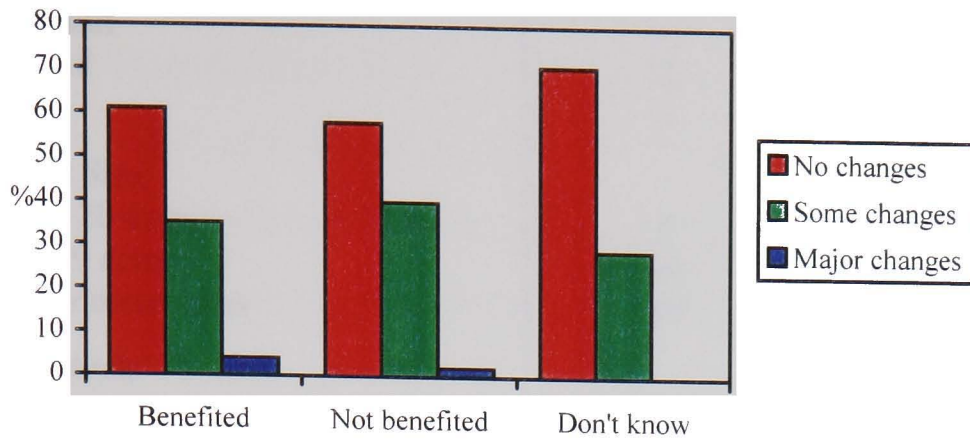
Figure 6.58 Respondents who did not reduce machinery, benefiting or not



(ii) Changes to farming operations

Figure 6.59 compares those respondents who believed that they had or had not benefited from the reforms with those who reported differing levels of changes to farming operations as a result of the CAP reforms. Of those who believed that they had benefited from the reforms, 61% said no changes to farming operations were necessary, 35% said some changes were necessary while only 4% said major changes were required. Of those who believed they had not benefited from the reforms, 58% said no changes were required, 40% said some changes were necessary, while only 2% said major changes to their farming operation was required. Of those who were not sure of benefiting or not, 71% had said no changes were required while the remaining 29% had reported some necessary changes. Therefore, regardless of whether respondents felt they had benefited or not, the majority in each case stated that no changes to farming operations had been necessary.

Figure 6.59 Respondents benefiting or not in relation to changes to farming operations



(h) Summary

The results of the cross-tabulations undertaken in this section are summarised in Table 6.4 below, suggesting that the majority of those who benefited from the reforms were lowland farmers and those with farms of less than 200 acres. The majority of beef, dairy cattle and sheep producers reported that they had benefited from the reforms. The majority of those who believed they had benefited were those who also reported increased incomes from COPs, beef cattle, dairy cattle and sheep, and who reported no changes to farming operations as a result of the reforms. Those who believed that they had not benefited were mainly upland farmers and those with farms of 200 or more acres, the majority of which reported no change to COPs or beef income, but reported increased sheep incomes and an equal split between an increase and no change to dairy income. Of those who did not benefit, most reported no changes to farming operations. Those who were unsure whether they had benefited or not were mainly those with farms of up to 20 acres and those with both upland and lowland farms. The majority of those unsure reported no change to COPs, beef or sheep incomes but reported increased dairy incomes. As above, the majority reported no changes to farming operations.

Furthermore, it is interesting to note that a higher percentage of those involved in set-aside, EPTs and diversification believed that they had benefited compared to those not involved in such activities. On the other hand, those involved in afforestation and who had reduced machinery levels in order to cut costs were more likely to believe that they had not benefited. However, the majority of respondents involved **and** not involved in these different activities felt that overall they had benefited more than not benefited.

Table 6.5 Respondents who did or did not benefit from CAP Reform

Variable	Benefited (%)	Did not benefit (%)	Don't know (%)
Location			
Lowland	64	45	57
Upland	31	55	43
Other	5	0	0
Farm Size			
Up to 20 acres	1	0	14
20-199 acres	60	35	57
200 or more acres	39	65	29
Livestock			
Beef	69	18	13
Dairy	72	16	12
Sheep	67	22	11
Set-Aside			
No set-aside	63	22	15
Some set-aside	74	11	15
COPs Incomes			
Increased	69	19	45
Decreased	3	38	3
No change	27	43	48
Variable	1	0	4
Beef Incomes			
Increased	42	30	18
Decreased	19	20	18
No change	36	42	39
Variable	3	8	25
Dairy Incomes			
Increased	48	40	50
Decreased	26	0	25
No change	22	40	25
Variable	4	20	0
Sheep Incomes			
Increased	43	40	21
Decreased	10	18	0
No change	26	16	68
Variable	21	26	11
Accompanying Measures			
Involved in EPTs	88	0	12
Not involved in EPTs	67	21	12
Considered afforestation	67	22	11
Not considered afforestation	71	16	13
Diversification			
Considered	88	4	8
Not considered	68	19	13
Machinery			
Reduced levels	70	20	10
Not reduced levels	70	17	13
Changes to Farming Operations			
No changes	61	58	71
Some changes	35	40	29
Major changes	4	2	0
ALL RESPONDENTS	70	18	12

6.3 Significance Testing

6.3.1 Hypothesised Relationships between Variables

As a result of information obtained through literature reviews and the pilot study, a number of relationships between particular variables were hypothesised. The main variables considered are farm location, farm size, set-aside and age.

(a) Farm Location

It was considered that the location of the farm might have a significant effect on a number of factors. Firstly, farmers whose farms were situated in upland Grampian might be more likely to experience income increases for the different sectors examined. SAC (1993), in their attempt to determine the effects and implications of the 1992 reforms for the Scottish farming industry, believed that farmers in the uplands would have “more flexibility and more potential to gain, practically and financially, from the reforms than the lowland farmer” (p. 8). Their figures suggested that even with stocking rates and cropping constraints, the new compensation packages would result in total farm gross margins rising up to 70% above pre-CAP reform levels. Lowland farmers, on the other hand, especially lowground intensive fatteners on largely cropping farms would experience sharp decreases in incomes. These decreases would occur as a result of high yielding cereals being under compensated and stocking rate constraints restricting the livestock enterprises.

Cook (1993), looking at the prospects for Scottish livestock farming in light of the 1992 reforms, also examined which farms would lose and gain and arrived at similar conclusions. Concentrating on the beef and sheep sectors, he examined the losses and gains in annual profits of three types of livestock farm, for 1996 when the reforms would be fully established. In exploring changes to a small LFA stock farm he predicted a very small gain in profit. For a lowground intensive cattle farm he suggested that a very large reduction in profit would take place. Finally, for a large upland unit, very large gains were predicted.

It was also thought that farmers with lowground farms may move towards less intensive farming methods and perhaps be more involved in extensification as an environmentally friendly production technique. This would be the case for both cereals and livestock as a result of low cereals compensation rates and stocking rate

constraints on livestock (SAC, 1993). However, Cook (1993) believed that in the short term at least, the reforms may result in increased intensive production methods despite the ‘extensification’ premium on offer. As increased support would lead to higher capital values, farmers would have to “strive for more units of output per unit of capital invested” (Cook, 1993, p. 9).

In light of the above hypotheses, it was believed that farmers located in lowland Grampian would be more likely to believe that, overall, they had benefited from the CAP reforms.

(b) Farm Size

It was thought that farm size might also affect a number of factors. In particular, farmers with smaller farms might be more likely to have experienced income increases for the sectors examined in the survey (COPs, beef, dairy and sheep), or at least to have met with no changes as opposed to decreases in their incomes, than their counterparts with larger farms. The reasons for this are due mainly to the compulsory set-aside requirements for producers growing more than 92 tonnes of grain a year, and cuts in cereal and beef prices. In contrast to larger farms, small producers receive transfer payments without taking land out of production.

It was also thought that farm size would affect which farmers believed that CAP reform had created a more stable environment to improve competitiveness. Koester and von Cramon-Taubadel (1992, p. 153) argue that “Government imposed acreage set-aside ... makes it more difficult for farmers with small farms to expand, hence undermining agriculture’s international competitiveness”. On the other hand, de Salis (1991), writing in response to the MacSharry proposals in 1991, argues that compulsory set-aside and price cuts penalise the larger efficient producers:

Efficient producers on good land will have their efficiency impaired by compulsory set-aside and their ability to survive as businesses strangled by drastic cuts in prices. It really does not seem to make much sense to fire off two barrels at larger farms in the hope that the recoil will enable small farms to survive (p. 26).

Similarly, Haynes (1992, p. 6) examines cereal cost increases for larger UK farms and argues that although these percentage increases in costs may be small, “they are additional to other costs and place Community farmers at an unnecessary competitive disadvantage”.

Taking the above hypotheses into account, it was believed that farmers with smaller farms may be more likely to believe that overall they had benefited from the MacSharry CAP reforms of 1992.

(c) Set-Aside

It was considered that set-aside may have a variety of effects on a number of factors. Firstly, it was thought that the larger farmers required to set-aside (in rotation) 15% of their COPs area would face reductions in incomes for this sector. Larger farmers were defined as those producing over 92 tonnes of cereals (which in Scotland corresponds to an area of 19 hectares for less favoured area (LFA) growers and 16 hectares for non-LFA growers (SAC, 1993)). The larger countries of the EU, especially France and the UK, argued from the start that this scheme favoured the smaller producers for whom set-aside was not compulsory. Buckwell (1992, p. 281) argued that “[a]ll but the smallest cereal growers (who are exempt from set-aside) will have lower net incomes, and for some, considerably lower”. He suggested that even with the compensation offered for price cuts, the loss in income for farms with average or above average yields would not be fully recompensed. However, at the same time he argued that there were three possible savings which could be made: the greater degree of certainty of the compensation payments; some savings on overhead costs; and less work to do because of the set-aside and less-intensive production. He then concluded, however, that these savings were unlikely to offset the reductions that the farmers faced.

As well as affecting incomes from COPs, it is believed that set-aside also affects a number of other factors. Koester and von Cramon-Taubadel (1992) argued that as a result of set-aside the use of other production factors on individual farms would be likely to be reduced, referring in particular to farm machinery and also agricultural labour. It was therefore considered that large farms with set-aside land may have to reduce the amount of machinery owned or leased in order to cut fixed costs. Buckwell (1993) also argued that set-aside would have an impact on machinery and labour. He suggested that some farmers might substitute machinery for labour in order to reduce overhead costs. Others, he argued, in an attempt to reduce depreciation costs, might slow down machinery replacement rates, thereby accepting more breakdowns and higher repair and labour costs. Lloyd’s Bank (1992) further argued that 15% set-aside would create a surplus of machine

capacity, thus benefiting the farmers who regularly depended on machinery rings and labour rings to do work. They expected that in the long term reduced agricultural labour on individual farms would increase farmers' reliance on equipment. It was therefore thought that larger farmers might be likely to contribute their surplus machinery to machinery rings. For some others, it was considered that there might have been a move towards shared ownership of some machinery in an effort to spread costs over a number of holdings.

It was also considered that those farmers required to set-aside 15% of their COPs area would not be so likely to be involved in environmentally friendly production techniques such as extensification. Koester and von Cramon-Taubadel (1992) believed that farmers with excess capacity would ignore ecological demands for less intensive farming methods and would instead try to produce more intensively than they would have without the set-aside requirement.

Although they might not be likely to become involved in the accompanying measures of the reforms, it was considered that farmers required to set-aside 15% of their COPs area may be more likely to have looked at alternative ways of diversifying their farming operations as a means of obtaining additional income to offset that lost through land set-aside.

Furthermore, it could also be the case that farmers under the compulsory set-aside scheme might feel that changes to their farming operations have been more extensive than for the smaller farmers not required to take part in acreage set-aside. As was discussed above, these farmers may find that set-aside affects income from COPs (where compensation payments do not cover income originally obtained through the cultivation of that land), affects machinery and labour on farm, and may affect how intensively they farm on the remaining land.

Taking the above hypotheses into consideration, it was thought that those farmers not required to set-aside land may be more likely to feel that they had benefited from the recent CAP reforms than those under the compulsory set-aside scheme.

(d) Age

It was thought that the farmer's age might also have an effect on a number of factors. Results obtained from the literature reviews and pilot study were used to develop the following hypotheses between different variables. Firstly, it was

considered that younger farmers might be more likely to be involved in environmentally friendly production techniques and to have considered afforestation and the development of forestry activities as an alternative use of agricultural land (Tweed *et al.*, 1994; Ellis and Heal, 1993). This may possibly be because older farmers are more conservative and less flexible, and might be more dependent upon more traditional means of farming. Similarly younger farmers might also have been more likely to consider alternative ways of diversifying their farming operations (Benjamin, 1994; Ilbery and Bowler, 1993). Age was also thought to have an effect on awareness of new developments in the CAP from Brussels, with younger farmers perhaps more aware of changes as they happen. Finally, it could be that younger farmers believe that they have benefited from the recent CAP reforms more so than those in the older age group.

6.3.2 Significance Testing of Relationships between Variables

SPSS operations were used to conduct significance testing for three-way cross-tabulations in order to explore the relationships between the variables above (SPSS Inc., 1993). The significance tests were conducted according to the type of data being analysed. Table 6.6 shows the types of data being analysed for this particular survey and the significance tests that were used to conduct the analysis. Significance levels are set at a point of 0.05 throughout and so differences are regarded as significant if $p < 0.05$. The results of these tests are examined below and a summary of the outcome of each hypothesis developed above can be found in Table 6.7.

Table 6.6 Significance Testing Types

DATA LEVEL		TEST USED	SUPPLEMENTARY TESTS
Independent Variable	Dependent Variable		
Nominal	Nominal	Chi (Pearson's)	Cramer's V ^(a)
Nominal	Ordinal	Chi (Pearson's)	Cramer's V
Ordinal	Nominal	Chi (Pearson's)	Cramer's V

Note: ^(a) Would be Phi if 2x2 table

No data existed at the levels of Nominal/Interval, Ordinal/Ordinal, Ordinal/Interval, Interval/Nominal and Interval/Interval.

(a) Farm Location

Hypotheses relating to farm location and income from COPs were not supported by the data analysis and nor were those for incomes from sheep production. Strong levels of significance were, however, found to exist between location and beef production (*Chi (Pearson's) 0.00056, Cramer's V 0.00056*) and location and dairy production (*Chi (Pearson's) 0.00012, Cramer's V 0.00012*). Upland farmers producing beef and dairy cattle were therefore more likely to experience income increases than farmers in the lowlands.

Hypotheses were formed about farm location and involvement in production techniques to protect the environment, landscape and natural resources, in particular involvement in extensification. Neither were supported by the data analysis meaning that upland farmers were no less likely than lowland farmers to be involved in such environmentally friendly production techniques.

Finally, it was found that upland farmers were significantly more likely to believe that, overall, they had not benefited from the reforms (*Chi (Pearson's) 0.03447, Cramer's V 0.03447*).

(b) Farm size

In examining the relationship between farm size and incomes for the four sectors of COPs, beef, dairy and sheep, it was found that in particular, very strong levels of significance existed between farm size and income from COPs (*Chi (Pearson's) 0.00000, Cramer's V 0.00000*) and farm size and income from beef production (*Chi (Pearson's) 0.00000, Cramer's V 0.00000*). Significant differences were also found between farm size and incomes from sheep farming (*Chi (Pearson's) 0.03329, Cramer's V 0.03329*). This means that farmers with smaller farms producing COPs, beef and sheep were more likely to have experienced income increases than their counterparts with larger farms. Hypotheses about farm size and dairy production were rejected.

It was found that farm size did have an effect on whether farmers believed that the recent CAP reforms had created a more stable environment for them to improve competitiveness. Those farmers with smaller farms were found to be significantly more likely to believe that a more stable environment had been created than those with larger farms (*Chi (Pearson's) 0.02477, Cramer's V 0.02477*).

Taking the above into account, it is therefore not surprising that very high levels of significance were discovered between farm size and whether the farmers believed that, overall, they had benefited from the CAP reforms of 1992 (*Chi (Pearson's) 0.00000, Cramer's V 0.00000*). This means that those farmers with smaller farms were more likely to have encountered benefits as a result of the new CAP than their larger counterparts.

(c) Land set-aside

Unsurprisingly, very strong levels of significance were discovered between land set-aside and income from COPs (*Chi (Pearson's) 0.00000, Cramer's V 0.00000*) meaning that smaller producers for whom set-aside was not compulsory would be more likely to have larger net incomes than the larger producers who would be likely to face reductions in incomes for this sector.

It was believed that set-aside would affect agricultural labour on farm but it would appear that this only affects full-time labour (*Chi (Pearson's) 0.00000, Cramer's V 0.00000*) with the hypotheses for other types of labour (part-time, hired and family labour) all rejected. Set-aside was therefore likely to lead to a reduction in full-time labour on farms, whilst not really likely to affect part-time, hired or family labour.

It was found that farms involved in compulsory set-aside would be significantly more likely to have to reduce the amount of machinery owned or leased in order to cut fixed costs (*Chi (Pearson's) 0.01279, Cramer's V 0.01279*). Similarly, these farms would be more likely to move towards shared ownership of some machinery in an effort to spread costs over a number of holdings (*Chi (Pearson's) 0.00842, Cramer's V 0.00842*). Furthermore, significant differences were discovered between set-aside and farmers use of machinery and labour rings (*Chi (Pearson's) 0.00000, Cramer's V 0.00000*) but no significant differences were found between set-aside and the contribution of machinery and labour to such rings.

It was hypothesised that set-aside would result in farmers being less likely to be involved in environmentally friendly production techniques and indeed significant differences were found to exist between these two variables (*Chi (Pearson's) 0.03409, Cramer's V 0.03409*). In particular, it was believed that farmers with set-aside would be less likely to be involved in extensification, rather they would be more likely to produce more intensively. It was unsurprising

Table 6.7 Significance Testing of Relationships between Variables

INDEPENDENT VARIABLE	DEPENDENT VARIABLE	CHI (PEARSON'S) SIGNIFICANCE	HYPOTHESIS ACCEPTED/ REJECTED ¹
Farm location	Income from COPs	0.12513	Rejected
	Income from beef production	0.00056	Accepted
	Income from dairy production	0.00012	Accepted
	Income from sheep farming	0.10862	Rejected
	Involved in production techniques to protect environment etc.	0.99036	Rejected
	Involved in extensification	0.92124	Rejected
	Benefited from CAP reforms	0.03447	Accepted
Farm size	Income from COPs	0.00000	Accepted
	Income from beef production	0.00000	Accepted
	Income from dairy production	0.16246	Rejected
	Income from sheep farming	0.03329	Accepted
	Stable environment created by new CAP	0.02477	Accepted
	Benefited from CAP reforms	0.00000	Accepted
Land set-aside	Income from COPs	0.00000	Accepted
	Full-time labour	0.00000	Accepted
	Part-time labour	0.70978	Rejected
	Hired labour	0.97608	Rejected
	Family labour	0.33949	Rejected
	Reduced machinery to cut costs	0.01279	Accepted
	Shared ownership of machinery to spread costs over holdings	0.00842	Accepted
	Use machinery or labour rings	0.00000	Accepted
	Contribute to machinery or labour rings	0.69049	Rejected
	Involved in production techniques to protect environment etc.	0.03409	Accepted
	Involved in extensification	0.08827	Rejected
	Considered diversification	0.19349	Rejected
	Level of changes required to farming operation due to new CAP	0.00085	Accepted
	Benefited from CAP reforms	0.10920	Rejected
Age	Involved in production techniques to protect environment etc	0.10290	Rejected
	Considered afforestation	0.60826	Rejected
	Considered diversification	0.68806	Rejected
	Extent of awareness of new developments in CAP	0.27756	Rejected
	Benefited from CAP reforms	0.59345	Rejected

Note: ¹ Hypothesis is accepted if Chi (Pearson's) significance levels are < 0.05.

therefore to find that set-aside was not a significant factor for involvement in extensification. It was however thought that these same farmers may consider diversification in order to obtain additional means of income but set-aside was not found to be a significant factor for consideration of diversification and this hypotheses was duly rejected.

As expected, strong levels of significance were discovered between set-aside and the level of changes in farming operations required due to the new CAP with

farmers under the compulsory set-aside scheme more likely to have undertaken more extensive changes than those not required to take part in acreage set-aside (*Chi (Pearson's) 0.00085, Cramer's V 0.00085*). The reasons for this are, as outlined above, that compulsory set-aside was likely to result in reduced incomes from COPs, would affect machinery and labour on farm, and would be more likely to affect how intensively the remaining land was farmed.

Finally, it was thought that farmers not required to set-aside land may be more likely to feel that they had benefited from the reforms than those under the compulsory set-aside scheme but no significant differences were discovered between these two variables and so this hypotheses was rejected.

(d) Age

Age was not found to be a significant factor for farmers' involvement in EPTs, afforestation or diversification. Nor were significant differences found between age and extent of awareness of new developments in the CAP from Brussels, or between age and whether farmers believed that they had benefited from the reforms or not. All the hypotheses relating to age were thus rejected.

6.4 Conclusion

The survey results analysed in this chapter indicate that, in general, the 1992 CAP reforms had a positive impact on the majority of respondents. The examination of survey frequencies showed the majority of COPs producers and dairy farmers reporting increased incomes. For beef and sheep producers, although incomes had not really changed, increases were more prevalent than decreases. The majority said that reform had not resulted in major changes to farming operations and believed that the CAP had created a more stable environment for farmers to improve competitiveness. Furthermore, a clear majority of 70% believed that they had benefited from the reforms with just 18% believing that they had not benefited.

In attempting to establish which type of respondents were most likely to have benefited from the reforms, two-way cross-tabulations were applied, the results of which were summarised in Tables 6.3, 6.4 and 6.5. Although the results are not clear cut in many instances, it would appear that the main variables affecting the

impact of the reforms were farm location and farm size. Involvement in activities such as set-aside, accompanying measures and diversification also seemed to indicate whether respondents benefited or not from the reforms. A number of observations were therefore drawn from the analysis.

In examining location, the evidence suggests that for COPs, beef and dairy producers, income increases were more likely to have occurred for respondents based in lowland Grampian. Changes in sheep incomes did not appear to be affected by location. Decreases in beef and dairy incomes were more likely to occur for respondents based in upland Grampian. The percentage of respondents reporting decreased incomes for COPs and sheep producers were very similar for both upland and lowland Grampian. In examining the levels of changes required to farming operations as a result of the reforms, it was found that in each case the majority reporting no necessary changes, some necessary changes and the requirement of major changes were all lowland respondents. However, in attempting to determine which respondents felt they had or had not benefited from the reforms, it was found that the majority of lowland respondents believed that they had benefited while the majority of upland respondents believed that they had not benefited. Indeed, significant tests conducted in order to explore relationships between variables confirmed that location was an important factor in determining the impact of CAP reform.

When farm size is examined it is found that the majority of respondents with COPs and beef cattle reporting increased incomes had farms of less than 200 acres but the majority of those reporting increased incomes for dairy cattle and sheep had farms of 200 or more acres. For reported decreased incomes the majority of beef and dairy producers had farms of less than 200 acres while the majority of COPs and sheep producers had farms of 200 or more acres. When changes to farming operations were examined it was found in each case that the majority of those reporting no changes, some changes and major changes were those with farms of less than 200 acres. In examining those who had or had not benefited from the reforms it was found that the majority of those who believed they had benefited had farms of less than 200 acres while the majority of those who believed they did not benefit had farms of 200 or more acres. The majority of those unsure either way were those with smaller farms. When significant tests were conducted, farm size was indeed confirmed as an important factor in determining the impact of CAP

reform. Overall, COPs and beef producers, in particular, and sheep producers, to a lesser extent, benefited more on farms of less than 200 acres. Smaller farmers were also more likely to believe that the new CAP had created a more stable environment and to believe that they had benefited overall from reform.

As noted in Chapter 2, the MacSharry reforms were designed to help the smaller producers in the Community. The survey evidence presented here suggests that in the period up to mid-1995, the majority of smaller farmers in Grampian (those with 200 or less acres) did appear to have benefited more from the reforms than their larger counterparts. Lowland farmers also appear to have been more likely to benefit from the reforms and it is interesting to note that the majority of lowland respondents had farms of less than 200 acres¹. MacSharry's aim of assisting the smaller producers would therefore appear to have been successful in Grampian at least during the period of this survey (up to mid-1995, the final year of the transitional period).

The MacSharry reforms were also aimed at encouraging the use of environmentally friendly production techniques and promoting afforestation. Diversification was also indirectly encouraged (see Chapter 8). When involvement in these activities is examined together with set-aside, it is therefore not surprising to find that those involved in such activities were mainly those who reported undertaking major changes to farming operations as a result of the reforms. Subsequently, those not involved in the same activities were more likely to report that changes to farming operations were not necessary. However, it is interesting to find that those involved in some of these same activities - set-aside, EPTs and diversification – were also more likely to believe that they had benefited from the reforms. Subsequently, those who had no involvement in these same activities were more likely to believe that they had not benefited. However, those who were engaged in afforestation of agricultural land also believed that they had not benefited. This may partly be explained by the fact that afforestation would not immediately lead to financial benefits, as timber production is a long-term investment (see Chapter 3).

This survey analysis has therefore established that the majority of respondents fared well from the 1992 CAP reforms and has established, to an extent, the type of respondents who benefited most. However, in concluding this way, the evidence presented in Chapter 4 on EU subsidies to Grampian's farmers

following CAP reform must also be taken into account. These high levels of arable and livestock subsidies were not solely due to reform, but the prosperity that was enjoyed at this time may partly explain why such a high majority of respondents believed that they had benefited from the reforms.

Having thus surveyed the impact of the 1992 CAP reforms on farmers in Grampian, the next chapter attempts to survey the possible impact of the reforms on agriculture-related industries in Grampian. Upstream industries that supply agricultural inputs and downstream industries distributing and processing agricultural products are clearly closely related to the agricultural community and therefore any changes to agricultural policy will directly affect such industries.

Endnote

¹ **Table 6.8 Location and farm size of respondents**

Farm Size	Farm Location (%)		
	Upland	Lowland	Other
Less than 200 acres	61	56	50
200 acres or more	39	44	50

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Chapter 7

The Possible Effects of the 1992 CAP Reforms on the Agriculture-Related Industries in Grampian

7.1 Introduction

Having examined in previous chapters the effects that the MacSharry CAP reforms have had on **agriculture** in Grampian region, here an attempt is made to establish the effects that the reforms may have had on **agriculture-related industries** in the region. Changes to agriculture, such as CAP reform, clearly affect farmers but any changes will also affect all the industries supplying farm inputs and those involved in the processing and marketing of farm outputs. Clearly it is not possible to measure exactly what changes have occurred as a direct result of CAP reform, but an attempt is made to establish what significant effects may have resulted from the various reform measures.

The chapter begins by defining the agriculture-related industries and examining those that exist in Scotland and Grampian (Section 7.2). This section also summarises the particular CAP reform measures that affected the agriculture-related industries and the likely impact of these measures, highlighting whether the impact would be positive or negative for each sector. Furthermore, it is acknowledged that in addition to CAP reform, there are intervening factors which can also have an impact on these industries. These variables can include factors such as changes in consumer demand or unfavourable weather conditions. A comparison of employment in agriculture-related industries in Scotland as a whole and Grampian then takes place (Section 7.3), employment being a valuable indicator of the importance of these industries to the economy.

In attempting to establish what changes occurred in the agriculture-related industries in Grampian between 1991-95, it was necessary to examine each sector upstream and downstream of agriculture individually. The problems encountered when gathering data on these industries must be noted. From the outset it was clear that very little, if any, statistical data was available on many of the industries being examined. Some Scottish data was obtained from Aberdeenshire Council, Grampian Enterprise, Scottish Enterprise, the SOAEFD and the Scottish

Agricultural College, but overall there is no real statistical data available on agriculture-related industries at a regional level. Regional employment figures are to be found but commercial confidentiality regarding Census of Employment/AES figures¹ prevents the use of such figures. Employing a variety of different search methods, some regional data was found for some industries but it was obvious that primary data would have to be obtained from the agriculture-related industries themselves. To this end a survey was undertaken in order to examine the industries relevant to Grampian, using a sample of companies from each industry (Section 7.4). Two categories emerged: 1) the food processing industry (comprising meat processing, dairy processing, grain milling and production of whisky); and, 2) other agriculture-related industries (comprising production of animal feeds, manufacture of agricultural and forestry machinery and wholesaling of agricultural raw materials and live animals). In the main, the data gathered related to output and employment over the period 1990-95. The data received thus enabled an analysis of changes that occurred over this period and allowed an assessment to be made of the possible impact of the CAP reforms on these businesses, whilst also taking into account the effects of intervening variables.

This chapter therefore presents the results of the survey of agriculture-related industries in Grampian which together with available secondary data, seeks to investigate the second part of the main hypothesis informing this enquiry (presented in full in Chapter 1): that "... between 1992-95, the overall effect on ... the industries indirectly related to agriculture was a positive one".

7.2 The Agriculture-Related Industries in Scotland and Grampian

7.2.1 Introduction

Alexandratos (1990) examines the relative size of the agro-food sector in the USA economy and of agriculture within it. He argues (p. 33):

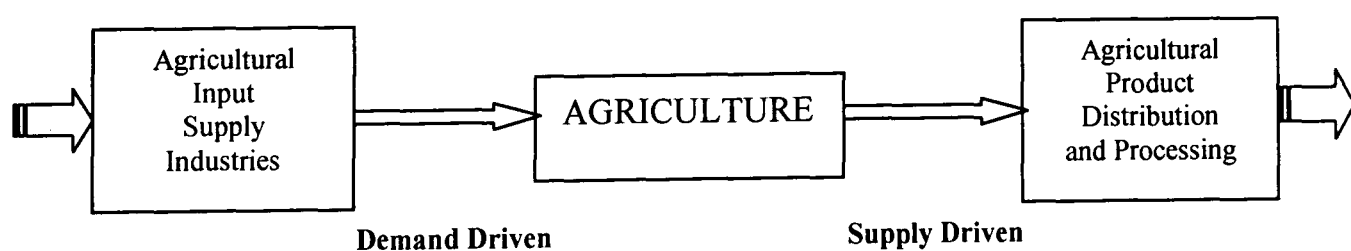
Agriculture is a key component of the much larger agro-food sector, comprising downstream industries (e.g. processing, retailing, catering) as well as upstream ones (e.g. the farm machinery, fertilizers and pesticides industries). These other industries depend in varying degrees for their growth, and sometimes for their very existence, on agriculture.

Alexandratos found that in 1985 the 'food and fibre' system, which includes agriculture and all upstream and downstream sectors, accounted for 17.5% of the

total economy while the farm sector alone accounted for only 1.8%. He then examined agriculture's share in the aggregate gross value added (GVA) of the economy in the seven major countries of the then EC² and found that agriculture's share was 3.1% compared to 3.7% for the downstream processing industries. It must be noted that these figures exaggerate the comparative weight of agriculture in the Community's whole agro-food system because while agriculture includes forestry, the processing industries do not include the downstream sectors of forestry, fibres, distribution and catering or furthermore the upstream sectors of the inputs industry. The importance of these agriculture-related industries to the economy of a region cannot therefore be underestimated.

The success of upstream industries supplying agricultural inputs (e.g. machinery, fertilisers, seeds and feeds) is dependent upon the economic success of those engaged in agriculture. Similarly the downstream industries (e.g. food processors and retailers) have a close economic and personal relationship with the agricultural community. Brown and Leat (1988) emphasise the importance of this relationship between the agriculture and food complex and note the great extent of mutual dependence within this complex. The upstream industries which supply agriculture with inputs are largely "demand driven" by agriculture's need of their products and services. In the same way, the downstream industries are largely "supply driven" by the availability of agricultural products. Brown and Leat (1988) present a diagram to emphasise this chain of industrial activity which is reproduced below (Figure 7.1).

Figure 7.1 Activity constraints in the agriculture and food complex



The strength or weakness of any element of this chain is interdependent upon the presence and efficient operation of each element of the chain. As an example of this they cite Grampian's Food Industry which in 1984 acquired 62% of its raw materials from within the Region (p. 37). Similarly, Grant (1997) refers to agriculture-related industries as 'linkage industries' – that is, supply and processing

industries linked to agriculture. One such industry is food processing (examined in detail in Section 7.5). In this sector the industries that buy, process and distribute agricultural output account for a large and increasing proportion of both value added and employment. For example, in 1990 UK agriculture employed 1.4% of the workforce but food processing accounted for 2.5% and food distribution for 2.7% (Marsh, 1991).

7.2.2 Classification

The major agriculture-related industries in Scotland can be classified as per the headings listed below, that is the Standard Industrial Classification (1992 Revision) as used by the Annual Employment Survey (AES) (CSO, 1995):

1. Agriculture and animal husbandry service activities, except veterinary activities
2. Production, processing and preserving of meat and meat products
3. Processing and preserving of fish and fish products
4. Processing and preserving of fruit and vegetables
5. Manufacture of vegetable and animal oils and fats
6. Manufacture of dairy products
7. Manufacture of grain mill products, starches and starch products
8. Manufacture of prepared animal feeds
9. Manufacture of other food products
10. Manufacture of beverages
11. Tanning and dressing of leather
12. Manufacture of pesticides and other agrochemical products
13. Manufacture of agricultural and forestry machinery
14. Wholesale of agricultural raw materials and live animals

Clearly, some of these sectors are more important to the Scottish economy than others. For example, in terms of employment we see from Table 7.3 below that the beverages sector accounted for the highest employment figures. Meat processing, fish processing and dairy processing are also major employers while sectors like oil and fat processing, grain milling and agricultural chemical production are not so important. Furthermore, not all the agriculture-related industries listed for the whole of Scotland are relevant to Grampian, for example oil and fat processing, tanning and production of agricultural chemicals do not take place in the Region (see Table 7.4). Those that are of particular importance to Grampian, for example meat processing, dairy processing and beverage production, are examined in-depth later in the chapter.

In addition to the industries listed above, other sectors are also influenced by developments in agriculture. Although it is not proposed to examine these sectors here, it is interesting to note four such sectors as suggested by Grant (1997):

1. veterinary medicines and other pharmaceutical products;
2. the financial services sector providing loans and insurance services to agriculture (in Britain, institutions providing such services are specialised agricultural departments of major lending institutions);
3. specialist institutions and firms providing educational, training and advisory services to agriculture;
4. specialist agricultural publications in the print media, together with television and radio programmes directed at a farming audience.

7.2.3 CAP Reform and the Agriculture-Related Industries

Marsh (1995) cites the CAP reform of 1992 as one of a number of changes that present “a daunting array of uncertainties” (p. 11) to farmers and agricultural-related industries alike. A number of other writers argue that agriculture-related industries are directly affected by policy changes. McCorrison and Morgan (1998) note that results from several applications of computable general equilibrium models³ linking agriculture with other sectors of the economy show that “policy reform directed at the agricultural sector will affect other sectors of the economy even if these other sectors are only indirectly associated with the agriculture via factor markets” (p. 158). In discussing linkage industries, Grant (1997, p. 4) states that “[p]roduction and sales levels in these sectors are often directly affected by decisions taken on the CAP”. Bryden *et al.* (1993) also argue that “[t]he CAP affects farmers and industries upstream and downstream from farming” (p. 6). Cereals, for example, hold a key position for agriculture and agriculture-related industries: “...while being a basic food directly affecting the price of bread, they are also the input into further production of livestock and therefore indirectly affect meat, eggs and milk” (Hendriks (1991, p. 51) quoted in Grant, 1997, p. 67).

Table 7.1 below shows the different agriculture-related sectors (relevant to Grampian) and the particular measures of the 1992 CAP reform likely to affect such sectors. The table suggests whether the effects of these measures on each sector were likely to be positive or negative. For example, the white meat processing industry (pig and poultry) appears to be the only one likely to suffer no real negative impact from the reforms. In contrast, grain milling, whisky production, and manufacture of agricultural machinery were likely to be negatively impacted.

Table 7.1 Key changes under the 1992 CAP reforms and the likely impact, positive (+) or negative (-), on agriculture-related industries in Grampian

CAP REFORMS	AGRICULTURAL RELATED SECTORS							
	Beef Processing	Pig and Poultry Processing ³	Dairy Processing	Grain Milling (Oats) ⁵	Whisky Production	Animal Feeds Production	Manufacture of Agricultural Machinery ⁹	Wholesaling of Agricultural Raw Materials/Live Animals
a. beef intervention price cut by 15%	- ¹	+				- ¹		-
b. increased direct payments through BSP and SCP schemes ^a	- ¹	+				+ ⁷		+/-
c. cut in dairy product quota levels ^b			-			-		-
d. dairy co-responsibility levy abolished			+ ⁴			+		+
e. butter intervention price cut by 2%			-					
f. cereal prices cut by 29%	+/- ²	+	+	- ⁶	- ⁶	+ ⁸	-	- ¹⁰
g. introduction of compulsory set aside for large farmers				- ⁶	- ⁶	-	-	- ¹⁰
h. introduction of agri-environmental measures ^c				-	-		-	- ¹⁰

Notes: ^a approximate doubling of direct payments through the Beef Special Premium and Suckler Cow Premium Schemes (subject to quantity ceilings)

^b dairy product quota levels cut by 1% in 1993/94 and a further 1% in 1994/95, in order to decrease the dairy herd

^c measures encouraging extensification

¹ measures expected to lead to reduced output of red meat; resulting in possible employment losses

² reduced cereal prices were expected to lead to decreased production costs (+), but not as substantial as that for pig/poultry producers, so beef processors were expecting to face increased competition from white meats (-)

³ CAP measures were expected to have positive impacts due to reduced output of red meats and lower production costs leading to significant increases in supplies of poultry meat

⁴ measure expected to reduce grain costs in livestock feeds

⁵ the oat crop was expected to be affected as the reformed arable regime favoured spring sown crops such as oilseed rape

⁶ measures expected to lead to overall reductions in cereals; possible employment losses

⁷ increased direct payments expected to lead to decreased slaughterings, thus increasing demand for feedstuffs

⁸ reduced cereal prices were expected to increase demand for compound feeds and therefore increase employment

⁹ the overall impact of these CAP measures was expected to be negative as they would probably lead to decreased use and sales of machinery, thus resulting in employment losses, although increased subsidies (through the introduction of compensation payments for lower prices and set-aside) did initially lead to increased sales of machinery

¹⁰ these CAP measures were expected to reduce seed sales, fertiliser and pesticide sales and reduce throughput of livestock units; employment losses likely

For the other industries, the different reforms had different effects, some positive some negative. Later in the chapter, it will be possible to compare the likely effects suggested in this table with the results from the survey of Grampian agriculture-related industries. Will output and employment be affected in the same way for each sector as predicted here?

7.2.4 Intervening Variables

Although CAP reform is likely to have a significant effect on the agriculture-related industries, there are other factors affecting these industries that clearly have to be recognised. Table 7.2 identifies a number of intervening variables that can add to or alter any effects caused by CAP reform. Some of these variables are important to one sector but not to another e.g. unfavourable weather conditions tends to affect the sectors dependant on arable crops such as grain milling and animal feedstuffs, but has no 'direct' impact on beef processing. However, it is difficult to determine what the effect of such variables will be. For example, changes in consumer tastes could be beneficial to an industry at one time but any subsequent changes may well

Table 7.2 Intervening variables affecting agriculture-related industries in Grampian

Sector	Intervening Variables
Meat Processing	- new meat hygiene regulations - BSE - changing consumer tastes - seasonal trends e.g. increased sales at Christmas
Dairy Processing	- changing consumer demand e.g. more low fat products
Grain Milling	- unfavourable weather conditions
Whisky Production	- changes in exchange rates - changes in excise duties - unfavourable weather conditions
Animal Feeds Production	- seasonal demand - unfavourable weather conditions - increase in surplus manufacturing capacity in area - blue ear disease in pigs
Manufacture of Agricultural Machinery	- 1992 devaluation of sterling - changing interest rates
Wholesaling of Agricultural Raw Materials and Live Animals	- unfavourable weather conditions - environmental awareness of agrochemical regulations

be detrimental to that same industry. In the same way one weather type e.g. rain, can have a positive effect at one time (e.g. after a particularly dry spell), but can cause untold damage at another time (e.g. if flooding occurs). When examining the agriculture-related industries it is therefore important to recognise and acknowledge

the existence of such variables. These will therefore be referred to at various points throughout this chapter.

The following section now examines changes in employment in agriculture-related industries between 1991-95, looking first at Scotland as a whole and then looking more specifically at Grampian. Any changes that have occurred during this time are analysed in order to show which changes, if any, can be attributed to CAP reform.

7.3 Employment in Agriculture-Related Industries in Scotland and Grampian

7.3.1 Employment in Agriculture-Related Industries in Scotland

The number of people employed in agriculture-related industries in Scotland between 1991-95 is shown in Table 7.3. It must be noted that in examining the data for this period comparability problems arise because whereas the 1991 and 1993 Censuses of Employment were a census of large companies together with a sample survey of smaller companies, in 1995 a full census was carried out through the Annual Employment Survey (AES) (which replaced the Census of Employment)⁴. However, despite such changes, Copus (1997, p. 5) believes that the data allows the drawing of “some tentative conclusions about the impact of CAP reform”.

From Table 7.3 below, substantial changes in employment levels are seen to have taken place over the period being analysed. The numbers employed in agricultural services activities (excluding veterinary activities) increased by almost five times between 1991-93 but then decreased by over half between 1993-95. Copus (1997) suggests this fall could have been as a result of farmers’ dubiety concerning the effects of CAP Reform. Between 1991-95 the food sector saw the following losses: meat processors decreased by 7%; dairy processors decreased by 25%; and grain processors saw losses of 60%. Overall these processors, relying primarily on home produced supplies, saw an average loss of 14% in the period 1991-95. Food processing as a whole incurred an employment loss of 7%, or 4,117 job losses, for the same period.

Table 7.3 Employment changes in agriculture-related industries in Scotland, 1991-95

	1991	1993	1995	Change 1991-93	%	Change 1991-95	%
Agricultural Service Activities	675	3,216	1,510	2,541	376.4	835	123.7
Processing meat & meat products	10,530	8,398	9,785	-2,132	-20.2	-745	-7.1
Processing of fish	7,030	6,506	6,738	-524	-7.5	-292	-4.2
Processing fruit & vegetables	2,876	2,803	1,210	-74	-2.6	-1,667	-57.9
Processing oils & fats	311	278	278	-33	-10.6	-34	-10.8
Processing dairy produce	2,799	2,293	2,099	-506	-18.1	-700	-25.0
Grain milling products, starch etc.	883	758	349	-125	-14.2	-534	-60.5
Production of other food products	13,519	11,548	14,660	-1,971	-14.6	1,141	8.4
Production of beverages	17,995	18,281	16,709	286	1.6	-1,287	-7.1
Food processing (mainly home produce)	14,212	11,449	12,233	-2,763	-19.4	-1,979	-13.9
Food processing (total)	55,943	50,864	51,826	-5,079	-9.1	-4,117	-7.4
Production of animal feeds	1,327	1,604	1,450	278	20.9	123	9.3
Tanning	495	605	719	110	22.2	224	45.3
Production of agricultural chemicals	0	9	7	9	n.a.	7	n.a.
Manufacture of agricultural and forest machinery	2,064	1,343	1,240	-722	-35.0	-825	-39.9
Wholesaling of agricultural raw materials and live animals	2,020	1,933	1,511	-87	-4.3	-509	-25.2
All agriculture-related industries	62,523	59,572	58,262	-2,951	-4.7	-4,261	-6.8
Total Employment	1,754,568	1,713,162	1,725,073	-41,406	-2.4	-29,495	-1.7

Source: Reproduced with kind permission of A. Copus, from Copus (1997).

Note: n.a. data not available

At the same time animal feeds producers saw an increase of over 9% in their workforce. Copus (1997) suggests that this increase could be attributed to growing use of composite feeds as a result of decreased cereal prices. Manufacturers of agricultural and forestry machinery saw losses of 40% of their workforce while wholesalers of agricultural raw materials saw losses of 25% in employment. Taking the total employment figure for agriculture-related industries in Scotland it is seen that a loss of almost 7% occurred between 1991-95. In comparison, total employment in Scotland fell by just under 2% over the same period.

Although Copus (1997) stresses that it is not possible to establish exactly how much of these employment losses in Scotland's agriculture-related industries were a direct result of CAP reform, he does argue that "the size of the changes would suggest a significant effect" (p. 5). He supports this statement with a discussion of forecasts made which indicated that CAP Reform would have an impact on employment in supply and processing industries rather than on agricultural employment. For example, Bryden *et al.* (1993) talk of the effects of the reforms on Scottish agriculture and suggest that "...the reform will have

significant employment effects as a result of increased set aside of arable land, particularly in industries upstream and downstream from agriculture” (p. 4). In agriculture, reducing cereal area by small percentages would only reduce labour on very large farms and where high levels of subsidies were making up for price changes, whereas in the supply and processing industries, comparatively large scale production meant that decreases in throughput or sales could result in proportionate employment losses.

Copus (1997) thus suggests that in Scotland over the period 1991-95 CAP Reform had a negative impact on employment in agriculture-related industries. The question now is, does the same picture emerge when we examine agriculture-related industries in Grampian? Can it be said that CAP Reform has in some way contributed towards employment losses in these industries in Grampian in the same way as it may have done in Scotland as a whole?

7.3.2 Employment in Agriculture-Related Industries in Grampian

As mentioned above, reasons of commercial confidentiality regarding Census of Employment/AES figures prevent the production of a table similar to Table 7.3 above for Grampian. However, although the number of employees in Grampian’s individual agriculture-related industries cannot be disclosed, it is possible to show the percentage change in employment that took place in each of these industries over the same period (Table 7.4). This enables the reader to see at a glance which industries have experienced reductions in employment and which have expanded. The main totals presented in Table 7.5 then give a general picture of employment changes that occurred between 1991-95.

From Table 7.4 it can be seen that agricultural service activities increased substantially between 1991-93 but fell back again up to 1995, a similar picture to that of Scotland as a whole. In the food sector (processors relying mainly on home produced supplies) between 1991-95 meat processing increased by 36% (compared to a Scottish decrease of 7%) and dairy processing fell by almost 43% (compared to a fall of 25% in Scotland). For grain processing, a rise of over 633% took place (compared to losses of 60% in Scotland). However, even with such a dramatic rise in employment, grain processing is not a major employer in Grampian. Oats are the only grain milled in Grampian and such a rise over the period 1991-95 is due to the

fact that the number of employees starts from a very small base and so any rise in employment would be seen as dramatic.

Table 7.4 Percentage change in employment in agriculture-related industries in Grampian, 1991-95

	% Change 1991-93	% Change 1991-95
Agricultural Service Activities	123.8	56.6
Processing meat & meat products	-1.4	36.0
Processing of fish	-3.0	-11.8
Processing fruit & vegetables	52.0	-97.3
Processing oils & fats	n.a.	n.a.
Processing dairy produce	-32.1	-42.7
Grain milling products, starch etc.	133.3	633.3
Production of other food products	-45.3	36.6
Production of beverages	26.5	14.7
Food processing (mainly home produce)	-8.8	17.8
Food processing (total)	-2.2	2.3
Production of animal feeds	4.0	50.0
Tanning	n.a.	n.a.
Production of agricultural chemicals	n.a.	n.a.
Manufacture of agricultural & forest machinery	-16.5	-30.4
Wholesaling of agricultural raw materials and live animals	14.5	-70.8
All agriculture-related industries	-0.5	-0.2
Total Employment	2.7	-0.1

Source: Derived from Census of Employment

Note: n.a. data not available

Table 7.5 Employment changes in agriculture-related industries in Grampian, 1991-95

	1991	1993	1995	Change 1991-93	%	Change 1991-95	%
Food processing (mainly home produce) ¹	1,849	1,686	2,178	-163	-8.8	329	17.8
Food processing (total)	10,227	10,005	10,459	-222	-2.2	232	2.3
All agriculture-related industries	11,489	11,436	11,470	-53	-0.5	-19	-0.2
Total employment	219,570	225,507	219,244	5,937	2.7	-326	-0.1

Source: Derived from Census of Employment

Notes: ¹ Meat, dairy and grain processing

Table 7.5 shows that in Grampian the numbers employed in the food sector rose by almost 18% whereas in Scotland as a whole the food sector saw a loss of 14%. Taking the food processing sector as a whole, it can be seen that employment in the Region increased by over 2% (compared to an overall decrease in Scotland of over 7%). For all agriculture-related industries, Grampian saw overall losses in the period 1991-95 of just 19 jobs, or 0.2% of the 1991 total. This compares with a fall in total employment in the Region of 0.1%. As Table 7.3 shows, the Scottish

average of job losses in the agriculture-related sector was substantially higher than in Grampian.

In Table 7.5 it is seen that agriculture-related industries in Grampian accounted for 11,470 jobs in 1995, that is 5.2% of the total workforce in the Region and only marginally less (-0.2%) than the workforce total in 1991. In comparison agriculture-related industries in Scotland accounted for 3.4% of Scottish employment, almost 7% less than the total for 1991. When the totals in Table 7.5 are compared to the equivalent Scottish totals in Table 7.3 the importance of Grampian to Scotland's agriculture-related industries can be shown (Table 7.6).

Table 7.6 Employment in agriculture-related industries in Grampian as a percentage of Scotland, 1991-1995

INDUSTRY	1991	1993	1995
Food Processing (mainly home produce)	13.0	14.7	17.8
Food Processing (total)	18.3	19.7	20.2
All agriculture-related industries	18.4	19.2	19.7
Total Employment	12.5	13.2	12.7

Source: Derived from Census of Employment

The Grampian food sector (mainly home produce) as a percentage of Scotland has risen from 13% to almost 18% between 1991-95. As a whole, the Grampian food processing sector represented over 20% of Scottish food processing employment in 1995, having risen constantly since 1991. At the same time total Grampian employment remained at around 13% of the Scottish total. Thus, while total employment remained constant a significant increase in the food processing sector was taking place. Leat and Ritchie (1991) state that one major factor which contributes to this rather high level of food processing activity is the traditional availability of local agricultural produce. For all agriculture-related industries, employment in Grampian as a percentage of Scotland again rose over the same period standing at almost 20% in 1995.

It was seen at the beginning of this section that for Scotland as a whole, employment in the agriculture-related industries decreased substantially between 1991-95. Copus (1997) suggests a link between such losses and CAP Reform, his assumptions being in accordance with various forecasts. However, these forecasts do not seem to tie in with the analysis of employment changes in agriculture-related industries in Grampian. A fall of only 0.2% was recorded for all agriculture-related industries in Grampian which is very much in line with the all-industries change of -0.1%. Indeed, in examining the totals for food processing, Table 7.5 shows that

employment has actually risen. Again, it is not possible to establish what proportion of these changes can be attributed to CAP Reform, but can it be argued that the reforms have had some effect on employment in agriculture-related industries in Grampian? Can it be said that in direct contrast to Scotland a whole and despite a number of forecasts to the contrary, CAP Reform in Grampian may have had an overall positive impact on employment in agriculture-related industries?

In attempting to answer these questions it is necessary to look at the agriculture-related industries that are important to Grampian and that may have been particularly affected by the MacSharry CAP Reforms of 1992. For example, will the lowering or raising of raw material costs increase or decrease the supply of certain products? The remainder of this chapter is therefore given over to an examination of 1) the food processing industry (primarily 'first stage' processors); and, 2) other agricultural-related industries. As mentioned at the beginning of the chapter, this examination is undertaken through means of a survey conducted on such industries in the region.

7.4 Survey of Agriculture-Related Industries in Grampian

The objective of the survey was to gather information from different agricultural related industries in Grampian to show:

- 1) the importance of the individual sectors to Grampian; and,
- 2) any changes in sales and employment levels in these sectors which took place between 1990-95 (before and after the CAP reforms had been implemented).

The data required from these industries would thus include sales turnover and numbers of employees for each company over the period 1990-95 (inclusive). This would enable the researcher to assess and attempt to explain changes that occurred over this period. For most agricultural-related industries in Grampian it was possible to contact all the main companies involved in that particular line of business e.g. meat processors, abattoirs, animal feeds, oat milling, livestock auctioneers and agricultural machinery manufacturers. For wholesalers of agricultural raw materials, it was impractical to survey every business and so a

sample of companies was contacted. A request for the required information was made from each company and where possible, year end reports and financial accounts were also supplied. Any other available secondary sources have been incorporated where possible. Indeed, for production of whisky it was deemed unnecessary to approach individual distilleries as a wealth of data regarding production levels, export values and employment levels, is available from secondary sources e.g. the Scottish Council Development Industry (SCDI).

The complete list of companies contacted (33 in total) can be found in Appendix II. Of this total, 21 companies were able to provide information for the survey. The results of the data collected is presented and analysed below, where Part A examines the food processing industries and Part B examines the remaining agriculture-related industries.

A. THE FOOD PROCESSING INDUSTRIES IN GRAMPIAN

7.4.1 Introduction

Swinbank and Tanner (1996) state that: “The CAP has a profound impact on the food industries” (p. 39). This is evident, considering that the food processing industry is the main initial customer for agricultural output, of which up to 80% is processed before reaching the final consumer (Marsh, 1991). There are two types of food processing industry: ‘first stage’ and ‘second stage’. ‘First stage’ food processors deal with agricultural raw materials and include industries such as abattoirs and dairy processors who prepare agricultural products for human consumption e.g. the pasteurisation of milk and its containerisation for human consumption. The CAP has an impact on these processors’ volumes of production as any quotas or measures that restrict the volume of raw material supplies will obviously affect their profitability. Furthermore, these first stage processors are often the instrument of agricultural policy and most CAP price support mechanisms operate around these first-stage processed products e.g. it would not be the price of raw milk that would be supported but rather the prices of processed dairy products. Swinbank and Tanner (1996, p. 40) state that as a consequence of this:

... these businesses are often as heavily implicated in the machinations of the CAP as are the farmers from whom they buy their raw materials and the storage companies that accommodate the intervention stocks.

‘Second stage’ food processors transform first stage processed products into semi-finished products. Although the CAP covers first stage food processing industries (being defined in Annex II of the Treaty of Rome), it does not cover the second stage industries. Such products are therefore referred to as ‘Non-Annex II Goods’ of the Treaty which defines them as food and drink products which are “a combination of two or more agriculturally based raw materials, or are processed beyond first-stage transformation”. These ‘further-processed’ products include things like: biscuits, confectionery, breakfast cereals, margarine, infant food, pizza, ready-to-eat meals, pasta, rice, non-alcoholic beverages and alcoholic drinks (Gunthorpe *et al.*, 1995a).

Second stage processing often means importing raw materials from non-EU countries. The CAP increases raw materials costs for such processors and they will often find it hard to pass these higher costs on to the retail stores. Of course, it may be possible to charge higher prices to consumers but this may result in a reduction in volume sold. Whereas the CAP benefits first stage processors because their products can be sold into EU intervention stores if required, second stage processors cannot sell their products into EU intervention. In addition they are disadvantaged by export subsidies and import levies and duties on raw materials from outwith the EU. However, as a means of compensation for processors having to buy raw materials at high CAP prices, their products qualify for export refunds. For example, grain distillers get subsidised through the Export Refund Scheme when EU cereal prices rise above world market prices.

In Grampian, food processing is a major contributor to the economy. In 1995 the estimated turnover of the food industry (excluding whisky) in Grampian was £1.14 billion, representing approximately one third of the total sales value of the Scottish food industry (Grampian Food Forum, 1995). Table 7.7 below shows the top five exporting industries in Grampian in 1995, which together account for 6.7% of national exports or £1,167 million. Including whisky, food and drink was the top export industry. Even excluding whisky (exports estimated at £617.9 million), food and drink still remains the top export industry, with £165.4 million of overseas sales.

Table 7.7 Top exporting industries in Grampian, 1995

Industry	1995 (£m)
1. Food and Drink (including whisky) ¹	783.3
2. Paper and Paper Products	153.3
3. Machinery/Equipment	129.0
4. Other Manufacturing Industry	23.4
5. Precision Instruments	23.2
TOTAL	1,166.7

Source: SCDI (1997, p.14)

Note: ¹ The value estimate for whisky is £617.9 million.

Leat and Ritchie (1991, p. 30) state (emphasis in original):

The major recognised **strengths** of Grampian food products lie in their **Scottishness** and the perception amongst buyers of their **high quality** and in some cases their **traditional** nature. Product quality is in many cases assisted by the availability of local high quality raw materials.

Leat and Ritchie go on to stress the importance of these attributes for sales of products outwith Scotland, particularly in Europe. Indeed, Brown and Leat (1988) had estimated that almost two-thirds of the Region's food production, excluding whisky and fish, was sold outwith Grampian. The Grampian Food Forum (1995, p. 4) also emphasise that "[t]he strength and uniqueness of our food industry is the access to locally sourced high quality raw materials".

Grampian firms in general are heavily engaged in inter-regional and international trade. Brown and Leat (1988) argue that this is not surprising due to Grampian's relatively small population, its remoteness and its advantage in producing certain primary commodities. The main disadvantage that the Grampian food industry faces is the distance to the main markets when selling produce outwith the Region. In a British and European context, Grampian is a peripheral Region, situated at a distance from the major centres of population, suppliers and markets. Additional costs are inevitably incurred as a result which in turn leads to increased inability to compete on price. Grampian's remoteness further deters new trading relations being established. However, Scottish Enterprise (1996) argue that:

The Scottish food and drink manufacturing industry has developed from a strong agricultural base, and the emphasis on food produced from natural ingredients in a quality environment continues to prove a unique selling point for the industry.

Furthermore, in 1991 Leat and Ritchie (pp. 33-4) conclude that:

There is a strong traditional food base in Grampian which can be developed on the basis of quality and added value. Despite the region's distance from markets, the Grampian food processing sector seems likely to expand with further penetration of its English and Continental markets.

As Table 7.5 above shows, their predictions of expansion were correct. Employment in food processing (mainly home produce) rose by nearly 18% between 1991-95 compared to an overall Scottish rise of just under 14%.

The following sections now go on to examine the different food processing sectors in Grampian in order to demonstrate any changes that may have occurred since CAP reform and attempt to assess the cause of these changes. Apart from whisky production, the survey only considers first stage processors.

7.4.2 Processing Meat and Meat Products

Meat processing can include the slaughter, cutting and packing of meat for retail sale in the form of fresh or frozen cuts, as well as further processing such as curing, smoking, cooking and canning. Furthermore, meat processing can include the use of meat as an ingredient in ready meals and other convenience foods.

It must be noted at the outset that the UK meat industry has faced difficult times since the mid-80s. Apart from the various CAP reforms, in particular the MacSharry reforms of 1992, and the GATT Uruguay Round Agreement, UK meat producers have also had to cope with EU regulations on animal growth hormones, UK laws on animal welfare, BSE (Bovine Spongiform Encephalopathy) which was discovered in 1986⁵, and changes in the agrimonetary system (Gunthorpe *et al.*, 1995b, p. 207). Furthermore new meat hygiene regulations and new rules regarding meat hygiene inspections have also created problems for the processors.

There are three main sectors in the meat processing industry: 1) poultry slaughtering and processing; 2) bacon curing and red meat processing; and, 3) abattoirs. In Grampian there are a number and variety of meat processors⁶ that shall now be examined.

(a) Poultry

The main CAP reform measure to affect the poultry processing industry was the reduction of cereal prices by 29%. Ackrill *et al.* (1998, p. 122) emphasise the importance of this to the poultry industry by stating that: “[p]igs and poultry can essentially be thought of as converters of cereals into meat/eggs”. Indeed cereals account for about half of the feed requirement for pigs and poultry. Mainland (1995) examined the knock-on effects of such reductions in feed price to the Scottish poultry industry (both meat and eggs). He concluded that “...changes to the

CAP, especially reducing cereal prices, will substantially affect the production costs of poultry producers” (p. 74). He argued that the reduced costs would benefit consumers through lower prices especially for poultry meat. A reduction in feed price would also result in significant increases in supplies of poultry meat. Furthermore, the reforms relating to beef also benefited the poultry processors. As beef output was to be reduced, the opportunity would arise for significant increases of white meat. As shown in Chapter 3, poultry production in Grampian did rise in the period following CAP reform. Production rose by almost 25% between 1991-95 while the overall rise in Scotland as a whole for the same period was just less than 9%.

Although poultry processing is important to Grampian, no data specific to the region was readily available for the purposes of this research. Grampian Country Chickens Ltd. is the main chicken processing factory in Grampian but as it is part of the Grampian Country Food group it was not possible to get a separate breakdown of figures for the Grampian region alone. Aberdeenshire Poultry (producers of free range chickens and oven ready chickens for supermarkets and catering companies) were contacted but no relevant data was available as the company had not begun trading until 1995.

(b) Bacon curing and red meat processing

Whereas pig producers were not adversely affected by the 1992 CAP reforms, beef production was affected in a number of ways (see Table 7.1). Firstly, the reduction in cereal prices (of 29%) was expected to result in decreased production costs for beef producers (although not as substantial as that expected for pig and poultry farmers). The intervention price for beef was cut by 15% over a three-year transitional period and a lower quantity ceiling was set with sales into intervention cut from 750,000 tonnes in 1993 to 350,000 tonnes in 1997. An approximate doubling of the suckler cow premium (SCP) and the beef special premium (BSP) - the two main forms of compensation payment - took place, although subject to a lower stocking rate⁷. With feed grain prices falling, red meat, in particular beef, would face increased competition from white meats. It was expected that while the pig and poultry sectors would be well encouraged by feed price reductions, the beef market would be curtailed (Grant, 1997).

The four red meat processing companies in Grampian that took part in the survey of agriculture-related industries are listed in Table 7.8 below, while Table

7.9 and Table 7.10, respectively, show the percentage change in sales turnover and numbers employed for these companies.

Table 7.8 Surveyed red meat processing companies in Grampian

COMPANY	LOCATION	COMPANY DETAILS
Quality Food Products (Aberdeen) Ltd.	Aberdeen	Bacon processors and manufacturers of traditional Scottish products.
McIntosh of Dyce	Aberdeen	Processors of chilled and frozen meat pies, sausages and ready meal manufacturers.
Bain of Tarves	Ellon	Catering butchers and suppliers of game and venison.
Donald Russell Ltd.	Inverurie	Suppliers of matured quality beef and lamb to hotels and restaurants over Europe and the Far East.

Table 7.9 Changes in output for red meat companies in Grampian, 1990-95

Company	Percentage Change in Sales Turnover					
	1990-91	1991-92	1992-93	1993-94	1994-95	1991-95
Quality Food Products (Aberdeen) Ltd.	0	12.8	9.4	-5.2	5.4	9.4
McIntosh of Dyce Ltd.	n.a.	n.a.	23.7	14.1	1.3	43.0 ¹
Bain of Tarves	5.9	12.7	13.9	10.2	14.1	61.3
Donald Russell Ltd.	n.a.	n.a.	n.a.	5.1	10.5	16.1 ²

Notes: n.a. data not available

¹ This figure is for 1992-95 as data for 1991 was not available.

² This figure is for 1993-95 as data for 1991 and 1992 was not available.

Table 7.10 Changes in numbers employed in red meat companies in Grampian, 1990-95

Company	Percentage Change in Numbers Employed					
	1990-91	1991-92	1992-93	1993-94	1994-95	1991-95
Quality Food Products (Aberdeen) Ltd.	8.7	12.0	-7.1	0	0	4.0
McIntosh of Dyce Ltd.	n.a.	n.a.	21.8	-1.0	-11.5	6.8 ¹
Bain of Tarves	n.a.	n.a.	n.a.	n.a.	n.a.	50.0 ²
Donald Russell Ltd.	n.a.	n.a.	n.a.	0	6.4	6.4 ³

Notes: n.a. data not available

¹ This figure is for 1992-95 as data for 1991 was not available.

² This is an estimated figure provided by the company

³ This figure is for 1993-95 as data for 1991 and 1992 was not available.

Although it was expected that decreased feed grain prices would have a detrimental effect on the beef meat market, this does not appear to have occurred in Grampian. As shown in Chapter 3, the beef breeding herd in Grampian rose by 3.4% between 1992-95 while the increase in Scotland as a whole was 1.9%. Such stability in the market was attributed to the favourable impact of the Suckler Cow Premium (SCP), which was increased under the 1992 reforms. For all four meat processing companies surveyed in Grampian, Table 7.9 shows that sales turnover increased significantly between 1991-95. Indeed McIntosh of Dyce Ltd. enjoyed a turnover increase of 43% over this period while Bain of Tarves saw sales increase by over 61%. In terms of numbers employed (Table 7.10), the data available indicates a

fluctuation in numbers over the years. This is largely to do with the nature of the business, affected especially by seasonal trends and fluctuations⁸, which can cause the numbers of employees to vary considerably. Nevertheless, over the period examined, each of the companies surveyed experienced overall increases in employment. Therefore, regardless of the predicted negative impacts of CAP reform (Table 7.1) and the negative effects of other intervening variables (Table 7.2), the red meat processing companies surveyed here indicated an overall picture of prosperity in terms of sales turnover and employment levels.

(c) Abattoirs

The number of abattoirs in the UK has fallen both dramatically and consistently since the early 1970s, a trend forecast to continue to the end of the 1990s (MLC, 1994b; Gunthorpe *et al.*, 1995b). Since the introduction of the European Single Market in January 1993, significant changes in the regulations governing abattoirs have taken place (MLC, 1994c). By 1996 all plants had to achieve EU approved status with the exception of smaller plants slaughtering less than 1,000 cattle units per annum who would have a permanent derogation to parts of the legislation. Today it is common for many of the larger abattoirs to deal directly with large retailers, meaning that they will slaughter, cut and bone, and pack on site. As consumer concern over food safety increases, major supermarket groups wish to trade directly with slaughterers so that all meat can be traced back to the farm it came from. This abattoir-retailer relationship results in the rapid decline of traditional wholesalers (Bryden *et al.*, 1993).

The CAP reforms affected slaughtered meat production in a similar way as for red meat processing. As mentioned above, the share of the beef meat market was expected to diminish as reduced feed grain prices favoured white meats. Following the reforms, the new system introduced for claiming Beef Special Premium (BSP) affected the usual pattern of cattle slaughterings during 1993. The first incremental increase in BSP took place on 1 January 1993 (from £39.75 to £49.13) and in order to qualify for the higher rate, producers carried livestock into 1993 (MLC, 1994a). Others marketed cattle early to take advantage of the transitional arrangements. This action led to a subsequent marked fall in slaughterings for the remainder of the year, especially during the final quarter when again, producers held onto finished cattle to enjoy the higher rate of premium payable from the start of 1994.

Although it is not possible to examine changes to production in abattoirs in Grampian due to unavailable data, figures for sales turnover and employment can be used in an attempt to examine whether lower slaughterings and reduced feed grain prices resulting from CAP reform affected the output of abattoirs.

Table 7.11 Surveyed abattoirs in Grampian

COMPANY	LOCATION	COMPANY DETAILS
Scotch Premier Meat Ltd.	Inverurie	Wholesalers and suppliers of beef, lamb and pork
McIntosh Donald Ltd.	Aberdeen	Wholesalers and suppliers of beef and lamb
Mathers (Inverurie) Ltd.	Inverurie	Wholesalers and suppliers of beef, lamb and pork

The three main abattoirs in Grampian that provided some information for this survey are listed in Table 7.11. However, it is difficult to summarise the overall changes that have occurred due to the incomplete nature of the data received and because changes to some companies have caused distortions to the figures. For example, Scotch Premier Meat Ltd., a division of the ANM Group, was created in 1994 following the merger of three meat plants. Nevertheless, Table 7.12 does show the percentage change in sales turnover for abattoirs in Grampian between 1990-95. It was not possible to provide a table showing employment changes as insufficient data regarding such figures was received, for example the number of employees for Scotch Premier Meat is included in the overall number of employees for the ANM Group (shown in Table 7.29 below).

Table 7.12 Percentage change in output for abattoirs in Grampian, 1990-95

Company	Percentage Change in Sales Turnover					
	1990-91	1991-92	1992-93	1993-94	1994-95	1991-95
Scotch Premier Meat Ltd.	5.1	-2.1	42	77	0.5	147.2
McIntosh Donald Ltd.	-6.0	-1.6	1.6	0	17.5	17.5
Mathers (Inverurie) Ltd.	n.a.	n.a.	n.a.	17.1	n.a.	n.a.

Notes: n.a. data not available

As Table 7.12 shows, Mathers (Inverurie) Ltd. were unable to provide a complete set of figures, although sales turnover for 1993-94 showed a significant rise. The figures for McIntosh Donald Ltd. show a significant increase between 1990-91 when turnover had fallen by 6%, and 1994-95 when sales decreased by over 17%, showing an overall rise of over 17% between 1991-95. The figures for Scotch Premier Meat are unfortunately distorted due to the company merger which took place in 1993, thus explaining such a high increase (147%) between 1991-95. The

company attributed the surprisingly small increase between 1994-95 (just 0.5%) mainly to the BSE scare in November 1995 and the resulting temporary ban on beef exports, which meant that the expected lift in sales for Christmas did not happen. Other intervening factors also affected this industry, such as rising packaging and plastics costs. Furthermore, as stated in the Regional Council's *Quarterly Economic Review* (GRC, 1995, pp. 3-4):

Over the past year [to March 31, 1995] normal gross margins have been difficult to achieve in the abattoir industry due to a general overcapacity in the industry, static cattle numbers and downward price pressure from supermarkets (GRC, 1995, pp. 3-4).

However, despite the negative impact of CAP reform and the clearly adverse effects of other intervening variables, the data available in Table 7.12 does generally indicate that the abattoirs surveyed experienced increased turnover between 1992 and 1995.

7.4.3 Processing Dairy Produce

The 1992 MacSharry reforms for the dairy industry were threefold. Firstly, dairy product quota levels would be reduced by 1% in 1993/94 and again by a further 1% in 1994/95. Secondly, although there were to be no reductions in milk prices, the butter intervention price was to be reduced by 2% in 1993/94 and again in 1994/95. From 1 August 1994, this reduction was increased to 3%. Thirdly, the dairy co-responsibility levy was to be abolished from the start of the 1993/94 marketing year. As shown in Table 7.1 such changes were expected to have a clear impact on the milk processing industry. Quota reductions and reduced intervention result in reduced supplies and create excess capacity in some sectors. Since the introduction of quotas in 1984, a reduction of around 18% in sales off farms in the UK has taken place, with butter and skimmed milk powder most affected (Wilson *et al.*, 1995).

However, whilst CAP changes to the dairy regime were expected to affect dairy processing, intervening variables must also be considered. Wilson *et al.* (1995, p. 205) state that "... long term changes in demand have had a profound effect on consumption of dairy products". Full-cream liquid milk and butter are the products most seriously affected with consumption levels at around a third and a quarter respectively of their peaks in the 1960s. Products that have emerged and grown during the 1980s and 1990s include low fat and skimmed liquid milk, Mozzarella cheese, yoghurt and fromage frais. Wilson *et al.* (1995) argue that one

reason for these growth areas can be attributed to public health concerns about fat in the diet. Another reason includes marketing strategies employed by producers to promote new 'fresh', value-added and convenience food products.

Table 7.13 examines the utilisation of milk by the Milk Marketing Boards (MMBs) in Scotland⁹ between 1990-94 (the Milk Marketing Scheme was revoked in 1994 as explained in Appendix III). Almost 50% of the milk sold to the Boards under wholesale contract was used to supply the liquid market while the remainder was processed into cheese and a widening range of other milk products. Overall, milk sold to the Boards fell by 15 million litres (a decrease of over 1%) between the milk years 1990-91 and 1993-94. While the proportion of milk supplying the liquid market rose by nearly 4% over this period, the amount processed into butter fell by 67% (resulting mainly from reduced quotas, the reduced butter intervention price and changing health concerns as noted above). The amount processed into cheese fell by only 1%. Although the MMB's statistics only cover milk sold through the Schemes, milk marketed outside the provisions of the Schemes accounts for less than 2% of all milk produced and marketed in the UK.

Table 7.13 Utilisation of wholesale milk in Scotland, 1990-94

April to March	Liquid Market	Butter	Cheese	Condensed Milk	Cream	Other Products	TOTAL
Million litres							
1990-91	647	60	327	131	8	2	1,175
1991-92	647	46	341	127	7	2	1,169
1992-93	647	37	305	142	7	2	1,140
1993-94 ¹	671	20	324	135	7	2	1,160

Source: The England and Wales Residuary Milk Marketing Board (1995)

Note: ¹The 1993-94 milk year (1 April to 31 March) was the last full year during which statutory milk organisations operated in the UK dairy market. Data for 1994-95 is not available following the deregulation of the Scottish Milk Marketing Schemes.

Utilisation figures for individual Boards are not published because of the need to preserve confidentiality of information for individual premises¹⁰. However, using data received from the SOAEFD we can examine the utilisation of milk in the Aberdeen and district area (Table 7.14). As shown, this data was only available up to October 1994, following the replacement of Aberdeen and District MMB by Aberdeen Milk Company Ltd. in November 1994. Liquid sales increased by 22.7 million litres (a 32.3% increase) between 1990-91 and 1993-94, although sales had dropped around 1991 and 1992. However, the proportion of milk processed into dairy products fell dramatically over this period. Milk to manufacture decreased by 3.2% between 1990-91 and 1991-92, decreased by 9.4% between 1991-92 and

1992-93, and decreased by 61.1% between 1992-93 and 1993-94. The decline between 1993-94 and the following milk year are even more dramatic, having fallen by 97.6% although figures are only available for April to October. Overall, the total utilisation of wholesale milk in the Aberdeen and District MMB area fell by almost 4% between 1990-91 and 1993-94.

Table 7.14 Utilisation of wholesale milk in Aberdeen and District MMB area, 1990-94

April to March	Liquid Sales	Butter	Cheese	Condensed Milk	Cream	Other Products	TOTAL
	Million litres						
1990-1	70.3	40.5	nil	nil	nil	0.4	111.2
1991-2	68.7	39.0	nil	nil	nil	0.6	108.3
1992-3	68.9	n.a.	n.a.	n.a.	n.a.	n.a.	104.8 ²
1993-94	93.0	n.a.	n.a.	n.a.	n.a.	n.a.	107.0 ²
April-Oct. 1994 ¹	67.8	n.a.	n.a.	n.a.	n.a.	n.a.	68.1 ²

Source: Derived from data obtained from the SOAEFD.

Notes: ¹ Complete data for the milk year 1994-95 is not available following the deregulation of the Milk Marketing Schemes in November 1994.

² Separate figures for milk to manufacture for the period 1992-93, 1993-94 and April-October 1994 was unavailable and so the Total given is for Liquid Sales *plus* the total milk to manufacture (i.e. butter + cheese + condensed milk + cream + other products) which was as follows:

1992-93	35.87 million litres
1993-94	13.96 million litres
April-Oct. '94	0.34 million litres

The only dairy in Grampian able to provide complete data for the survey was Mackie's Limited. In 1994 the company had divested from liquid milk, selling the milk business and investing further in the existing ice cream dairy which by 1993 was producing some 6 million litres annually. Table 7.15 below shows the change in sales turnover for the ice-cream business between 1990-95. The number of employees shown includes the total for both the liquid milk and ice-cream businesses. The dramatic drop in employees between 1993-94 and 1994-95 is as a result of the sale of the milk business when employees involved in this side of the business joined the new company.

As Table 7.15 shows, sales turnover increased steadily between 1990-95 with a significant rise of over 127% occurring between 1991-92 and 1992-93. Indeed, between 1990-91 and 1994-95, sales turnover had increased by over 224%. In terms of numbers employed, there were increases between 1991-92 and 1993-94, but as mentioned above, numbers dropped significantly following the sale of the milk business. One other dairy, Michells Inverurie Dairy were only able to provide data regarding employment and stated that numbers had increased by 50% over this period.

Table 7.15 Percentage change in output and employment for Mackie's Limited, 1990-95

Period	Percentage Change	
	Sales Turnover	No. of Employees
1990-91 – 1991-92	5.2	-0.3
1991-92 – 1992-93	127.3	4.4
1992-93 – 1993-94	22.0	18.9
1993-94 – 1994-95	10.6	-59.7
1990-91 – 1994-95	224.4	-50.1

Having thus received limited information on dairy processing in Grampian, it is difficult to assess exactly what changes have occurred and why between 1990-95. From the figures received from the SOAEFD (Table 7.14) it would appear that between 1990-91 and 1993-94, the proportion of milk used to supply the liquid market increased but milk processed into various dairy products in the Aberdeen and District MMB area, especially butter, declined consistently and dramatically. Overall, the amount of milk sold to the MMB decreased by 4% between 1990-91 and 1993-94. As mentioned earlier, as well as the CAP having a profound effect on the dairy sector, intervening variables have also played a large part in impacting the milk processing sectors. Changes in demand relating to health concerns over fat content in food and producers marketing strategies, have contributed to the fall or rise in consumption of some dairy products. However, it is clear that regardless of both CAP reform and other intervening factors, Mackie's Limited, the only dairy processing company to provide complete data for the survey, have prospered over the period 1990-95. Ironically, the company diversified into ice-cream to use up surplus cream from the dairy output as more health-conscious consumers opted for low-fat milk. Between 1990-95 sales turnover increased by 224% to over £1.3 million.

7.4.4 Oat Milling

The only grain milling for human consumption that takes place in Grampian is that of oat milling, oats being a crop well suited to the climatic and soil conditions of the Grampian area. Oat production was affected by CAP reform in a number of ways. As mentioned in Chapter 3, reductions in cereals occurred between 1992-93 as a result of the introduction of rotational set-aside. In the following years further reductions took place as the reformed arable regime favoured spring sown crops, in particular oilseed rape, because of the lower variable costs over winter sown

cereals. Table 7.16 shows the decline in the oats area sown in Grampian between 1991-95 with the largest decrease occurring between 1992-93. As Table 7.17 shows, the oats area sown in Grampian decreased by almost 22% between 1991-95.

Table 7.16 Oats area sown in Grampian, 1991-95

Year	1991	1992	1993	1994	1995
Area Sown (ha)	10,309	10,019	8816	8955	8454

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991.

Table 7.17 Change in oats area sown in Grampian, 1991-95

Period	1991-92	1992-93	1993-94	1994-95	1991-95
% Change	-2.8	-12.0	1.6	-5.6	-21.9

Source: SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991.

There is one large oat processing plant in Grampian. Grampian Oat Products, based in Boyndie, is a division of North Eastern Farmers Ltd. (NEF) and so it was not possible to obtain data regarding changes in sales turnover and numbers of employees. These figures are incorporated into the overall figures for NEF which are presented in Tables 7.28 and 7.29 below. However, the manager of the mill stated that employment figures in 1995 were relatively unchanged since 1991. In terms of production, levels rose from 2,000 tonnes of finished products per annum in 1991 to 8,000 tonnes of finished products per annum in 1995 (to produce this amount, utilisation is 14,000 tonnes of grain). This amounts to a rise of 300% in production between 1991-95.

In addition to the changes outlined above which occurred as a result of CAP reform, the weather also caused difficulties for the oat business between 1993-95. Ongoing wet weather in 1993 resulted in a poor quality oats harvest. The 1994 harvest then produced an exceptionally high output, but retail volumes were reduced due to the unseasonably warm winter weather. The oat milling industry has therefore felt the impact of both CAP reform and external factors, in particular extremes of weather. However, despite such negative factors, the oat milling industry in Grampian has seen production and turnover grow steadily between 1991-95.

7.4.5 Whisky Production

The alcoholic drinks sector is an important part of the UK food and drink industry with spirits production being dominated by whisky: in 1993 Scotch whisky accounted for around 90% of the UK's total spirit production (Gunthorpe *et al.*, 1995a). Grain whisky accounts for 60% of whisky production, while malt whisky accounts for 40%.

Because whisky is an end product of the cereals industry, the 1992 CAP arable reforms (in particular set-aside which reduced EU cereal production by 10% between 1991-94) may have affected the whisky industry. The following discussion examines the industry in Scotland and Grampian in order to assess changes that have occurred between 1991-95. The value added by the industry, export values, and employment levels are thus examined.

(a) Output and Value Added

The importance of an industry to the national economy is best measured by its contribution to the Gross Domestic Product (GDP)¹¹, the industry-level equivalent of which is gross value added (GVA). Therefore, the importance of whisky production to Scotland is not simply in the value of whisky sales but rather in the value added by the industry and the value of inputs sourced in Scotland. Although the sector uses relatively low amounts of raw materials, the value-added in the distilling process is immense, as are the indirect costs related to bottling, distribution and marketing alcoholic drinks. For example, in 1994 the value of inputs sourced in Scotland was 86%, with 9% from the rest of the UK and 5% from overseas (Scott and Winstanley, 1997). The gross output in 1994 was £1,995 million and GVA was £700 million. The input costs were therefore £1,295 million (i.e. gross output - GVA) of which 86% is £1,114 million. The value to the Scottish economy in 1994 was therefore £1,814 million:

	<u>£million</u>
Value of Inputs	1,114
+ GVA	<u>700</u>
Value to Scotland	<u>1,814</u>

Of the total gross output (£1,995 million) only 8% of sales was consumed within Scotland (worth £159.6 million). Therefore 92% of sales (worth £1,835.4 million) were to the rest of the UK and overseas.

For the whisky industry it is difficult to correlate the effect of changes on input costs with the effect on output due to the time lag between production and sales i.e. the whisky produced is left to mature in wooden casks for 8 to 12 (or more) years. As 92% of whisky sales are for export, sales fluctuations are more likely to be affected by intervening factors such as changes in exchange rates and changes in excise duties. Such factors make it extremely difficult to assess the impact, if any, of changes in cereal prices with output and sales of whisky.

However, while it is difficult, if not impossible, to determine the relationship between annual cereal prices and annual whisky sales, it is easier to determine the relationship between cereal production and whisky production. In Table 7.18 below, the top half of the table shows the volume of whisky produced in Scotland¹², and the barley area sown (total spring and winter barley) for both Grampian and Scotland as a whole. In the bottom half of the table, 1991 has been taken as a base year and an index has been applied to whisky and cereal production. Applying an index enables a chart to be plotted (Figure 7.2) which shows the fluctuations between the various categories and possible relationships that may exist without having to adjust the chart for the different units of production. However, this does not give a truly accurate picture as the figures produced below cover total barley sown and not just malting barley sown. In the mid-1990s malting barley varieties represented 40-50% of all barley sowings in the UK¹³ although actual UK malt consumption by brewers, sales maltsters and distillers was only around 30% (Bojduniak and Sturgess, 1995). This must therefore be taken into account when examining Figure 7.2, which shows the relationship between Scotch Whisky production and acreage of **total** barley sown.

Table 7.18 Scotch whisky and barley production, 1991-95

	Year				
	1991	1992	1993	1994	1995
Scotch Whisky (m litres) ¹	420	375	350	360	375
Barley ('000 hectares sown Scotland) ²	329	311	276	262	290
Barley ('000 hectares sown Grampian) ²	103	98	95	91	104
	Year				
	1991	1992	1993	1994	1995
Scotch Whisky Index	100	89.3	80.5	85.7	89.3
Scottish Barley Index	100	94.5	83.9	79.6	88.1
Grampian Barley Index	100	95.1	92.2	88.3	101

Notes: ¹ Estimated figures from Scott and Winstanley (1997).

² These figures are the sum of spring and winter barley sown (SOAEFD, 1995a; SOAFD, 1994a, 1993a, 1992a, 1991).

Figure 7.2 Relationship between whisky production and acreage of barley sown in Scotland and Grampian 1991-95

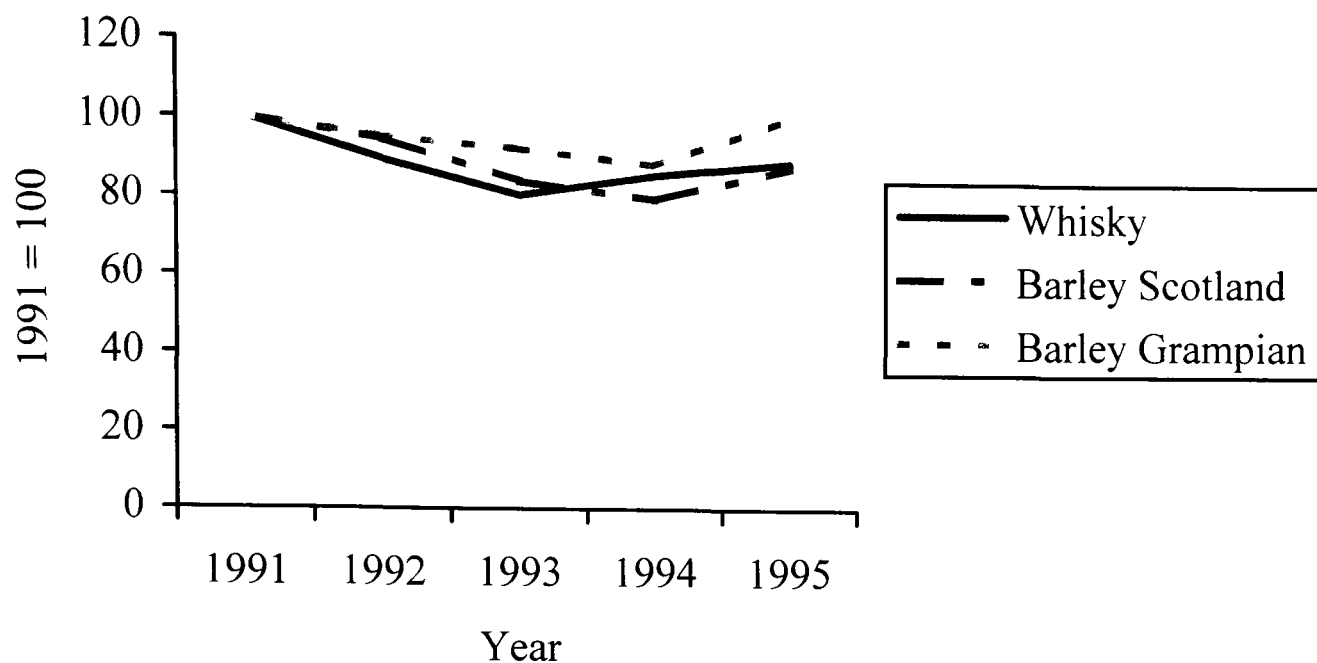


Figure 7.2 suggests that barley production lags behind whisky production, rather than cereal prices determining the volume of whisky produced. As is shown, this is more so for Scotland as a whole than for Grampian. Instinctively, farmers will sow barley based on historic data thus falling demand from distillers will affect the acreage sown the following year i.e. current years planting will be based on previous year's demand. Gunthorpe *et al.* (1995a) argue that whisky production has tended to change with the level of economic prosperity. This may explain the fall in production that occurred in the early 1990s during a time of recession. Therefore, as indicated in Figure 7.2, in 1994 farmers in Scotland expected a fall in production as with the previous years (perhaps due to the recession) but whisky production actually rose. The lag effect is also evident in 1995 where planting would have been sufficient for 1994 whisky production but lags behind the growth in actual whisky production.

(b) Exports

The Scottish Council Development Industry (SCDI) estimate whisky production and export value for Grampian based upon the volume of alcohol produced locally as a proportion of the Scottish total. They found that for Scotland in 1995, whisky accumulated export earnings of £2.28 billion, an increase of 3.9% from 1994, making the whisky industry the third most important sector for Scottish exports¹⁴ (SCDI, 1997). Table 7.19 below gives a comparison between Scotland and Grampian for the level of whisky production. It is seen that Grampian accounted

for over 52% of Scotland's distilleries in 1995 and accounted for 27.1% of the total production capacity. Table 7.20 shows the export value for whisky in Scotland and Grampian in 1994 and 1995. Grampian whisky exports were worth £617.9 million in 1995, rising by £4.3 million from the previous year. However, Grampian exports as a percentage of Scotland fell from 28% in 1994 to just over 27% in 1995.

Table 7.19 Whisky production in Scotland and Grampian, 1995

	Scotland	Grampian	Grampian as a % of Scotland
Number of Distilleries	92	48	52.2
Production (million litres of alcohol)	550.72	149.45	27.1

Source: Derived from SCDI, 1997 (p.14)

Table 7.20 Whisky export value for Scotland and Grampian, 1994-95

Year	Scotland (£m)	Grampian (£m)	Grampian as a % of Scotland
1994	2,191.3	613.6	28.0
1995	2,276.8	617.9	27.1

Source: Derived from SCDI, 1997 (p.14)

(c) Employment

Employment in the whisky industry in Scotland was 10,700 in 1994, that is 3.2% of manufacturing employment (Scott and Winstanley, 1997). In addition to direct employment, the Scotch whisky industry supports a number of indirect and induced jobs in other industries. In 1994 around 22,500 indirect and induced jobs were supported by the industry which means that total employment dependent on the industry in Scotland in 1994 was around 33,200. Of these indirect and induced jobs, 3,200 (15%) were employed in the agriculture industry (Scott and Winstanley, 1997).

The levels of employment in the whisky industry throughout Scotland are shown in Table 7.21 below. Grampian accounts for 15% of Scottish whisky industry employment, that is 1,600 jobs. The large concentration of whisky industry employment in Strathclyde (56%) results from the location of blending and bottling plants in the region, blending and bottling being a more labour intensive process than distilling.

Table 7.21 Whisky employment in Scotland by region, 1994

Region	Whisky Employment	Employment as a % of Scotland	Whisky Employment as a % of Manufacturing Employment
Grampian	1,600	15.0	4.9
Highland	500	4.7	6.8
Lothian	1,100	10.3	2.3
Strathclyde	6,000	56.0	3.9
Tayside	300	2.8	1.4
Rest of Scotland	1,200	11.2	1.8
Scotland	10,700	100.0	3.2

Source: Scott and Winstanley (1997)

In summary, whisky is clearly an important industry in Grampian. In 1995 the region accounted for over 27% of Scotland's total production, whisky exports rose to £617.9 million, and, in 1996, direct employment was 1,750. The CAP affects the whisky industry in a number of indirect ways as the industry is clearly a major consumer of top quality malting barley and other cereals affected by the arable reforms in 1992. However, as mentioned above, it is difficult to compare the inputs into the industry with gross outputs because of the lag between production and sales. Rather, gross output is more vulnerable to factors such as changes in exchange rates and excise duties. Nevertheless, Scott and Winstanley (1997) argue that the industry has been restricted by the CAP because of having to source grains from the EU wherever possible. The EC has, however, provided financial support through the Export Refund Scheme, providing compensation when EU cereal prices were above world market prices.

B. OTHER AGRICULTURAL-RELATED INDUSTRIES IN GRAMPIAN

7.4.6 Production of Animal Feeds

Compound feeds are the main product of the animal food industry (Dean, 1992) with other supplementary products¹⁵ providing the compound industry with its raw materials. A wide variety of feed is available for all types of farm animals but the main markets are dairy and beef cattle, poultry and pigs. Demand for feed depends not only on the numbers of farm animals, but also on factors such as climate and season, for each sector of farming. Demand is highly seasonal as ruminant stock (cattle and sheep) use grass as their main food source from April-October. Demand for compound feed therefore peaks from October to March.

The EU is the leading world producer of animal feed. In the UK alone, the industry was estimated at £3.28 billion in 1994 (Doyle, 1995). Since 1984 the quantity of feed used has decreased, due mainly to the reduction in the dairy herd following the introduction of milk quotas. A milder climate in recent years has also led to a plentiful supply of grass that has consequently led to less need for substitute feeds. The 1992 CAP reforms, in terms of cereals and to a lesser extent the livestock sectors, were expected to affect the demand for feedstuffs and change the pattern of demand for ingredients (Gardner, 1993). Tighter limits on beef intervention led to reduced beef output while abolishing the co-responsibility levy reduced grain costs in livestock feeds and consequently, there was a decline in demand from the beef and dairy sectors. The reduction in cereal prices which led to lower feed costs meant that pig and poultry meat would be more competitive thus leading to increased consumption and consequently the demand for compound feeds from the pig and poultry sectors increased significantly.

Grant argues that such CAP measures have led to a slight fall in demand for animal feeds (Grant, 1997). However, Gardner (1993, p. 73) argues that because the reforms reduced the price of cereals and other ingredients, “this reduction in the cost of raw materials should have a stimulating effect on the demand for animal feed and also make the Community’s livestock industry more competitive”. So, what was the effect of CAP reform and other intervening variables on the animal feeds industry in Grampian? The four milling companies that took part in the survey are listed in Table 7.22. These are the only companies dealing with the production of animal feeds in Grampian.

Table 7.22 Surveyed animal feeds companies in Grampian

COMPANY	LOCATION	COMPANY DETAILS
East Coast Viners Grain	Stonehaven	Animal feeds producers
Grampian Country Feeds Ltd. ¹	Banff	Animal feeds producers
North Eastern Farmers Ltd.	Turriff	Animal feeds producers
Harbro Farm Sales Ltd.	Turriff	Animal feeds producers

Note: ¹ See Endnote 16.

Only two companies were able to provide employment figures for the survey: East Coast Viners Grain saw employment increase by 167% between 1991-95 while Grampian Country Feeds reported no change. Although none of the companies contacted were able to provide specific sales turnover figures, a general picture emerges from what information was available. Between 1991-94 the animal feed industry experienced an overall increase in production and sales levels. In

particular, the long winter of 1993-94 led to increases in the volume of compound feed sold, especially in the dairy, beef, sheep and pig sectors. The main difficulties faced by the industry in Grampian took place between 1994-95 with overall performance affected by a number of external influences, including an increase in surplus manufacturing capacity in the area. However, the main problem at this time concerned pig and poultry feed. The NEF reported decreased sales in these feeds while Harbro Farm Sales Ltd. saw their pig feed production fall by over 35% between 1993-95 and poultry feed production fall by 19% between 1994-95 (see Table 7.23 below). As shown in Table 7.24, pig feed accounted for 72% of all Harbro feed produced in 1993. By 1994 this figure had fallen to 63%, falling further to 50% by 1995. Such significant decreases were primarily due to reductions in pig and poultry volumes. The Meat and Livestock Commission reported in 1994 that the decrease in pig compound feed prices was due to pressure from pig producers suffering decreased profits as a result of very low finished pig prices in the latter half of 1993 and into 1994 (MLC, 1994a, p.45). In addition to

Table 7.23 Production levels for Harbro Farm Sales Ltd, 1993-95

Feed Type ¹	Production (tonnes)			% Change 1993-95
	1993	1994	1995	
Pig	5,302.27	4,501.80	3,458.22	-34.8
Calf and Dairy	65.09	75.86	370.25	468.8
Beef	423.26	488.88	536.14	26.7
Pedigree Beef	56.25	53.84	204.57	263.68
Sheep	808.13	1,094.27	1,489.80	84.4
Poultry	586.48	862.31	699.28	19.2
Miscellaneous	134.74	122.28	117.90	-12.5
TOTAL	7,376.22	7,119.24	6,876.16	-6.8

Note: ¹All animal feed produced is coarse mixes, meals and fat premixes – compound feed is not included.

Table 7.24 Feed type as a percentage of total feed produced for Harbro Farm Sales Ltd, 1993-95

Feed Type	Feed type as a % of total feed produced		
	1993	1994	1995
Pig	71.9	63.2	50.3
Calf and Dairy	0.9	1.1	5.4
Beef	5.7	6.9	7.8
Pedigree Beef	0.8	0.8	3.0
Sheep	11.0	15.4	21.7
Poultry	8.0	12.1	10.2
Miscellaneous	1.8	1.7	1.7

low pigmeat prices, Grampian's pig population had also declined as a result of blue ear disease (see Chapter 3). However, both NEF and Harbro Farm Sales Ltd. reported an increase in cattle feed sales. Table 7.23 shows the dramatic rise in calf

and dairy feed production which took place between 1993-95 when levels increased by more than five times (469%), and as a percentage of total feed produced, increased from under 1% to over 5%. Pedigree beef feed production also increased dramatically over this period (264%), and as a percentage of total feed produced, rose from under 1% to 3%. Between 1993-95 there were also significant increases in production levels of sheep, beef and poultry feed.

Changes to the CAP are a major source of uncertainty for the animal feedstuffs industry, an industry particularly vulnerable to changes in milk quota or beef support prices which provide high margins of mainstream volume production. As seen above, it was predicted that CAP reform would lead to changes in demand and in the pattern of demand in the animal feeds industry. However, the analysis of the industry in Grampian has revealed that such patterns did not materialise. Decreased demand for dairy and beef feed and increased demand for pig and poultry feed was not the case in Grampian. Instead companies reported increased demand for dairy and beef feed and decreased demand for pig and poultry feed. Such changes were attributable to both CAP reform and other factors. As suggested above, intervening variables were the cause of a number of changes in the industry i.e. weather conditions, low pigmeat prices, disease in pigs, etc. Bojduniak and Sturgess argued in 1995 that returns from feed compounding were relatively good with independent feed compounders doing very well in some areas. It would appear that overall, this was the case for the animal feeds industry in Grampian.

7.4.7 Manufacture of Agricultural and Forestry Machinery

In the early 1990s production and sales of agricultural machinery and equipment deteriorated substantially as the uncertainties associated with CAP reform and the GATT negotiations led farmers to be more cautious about buying new equipment (Grant, 1997). This was certainly the case in the UK as is shown in Tables 7.25 and 7.26 below. Production of wheeled tractors fell dramatically by 30% between 1990-91, followed by a further, albeit less dramatic, fall (-2%) in 1992. Between 1990-91, UK manufacturers of agricultural machinery also experienced a drop in sales of almost 4% (Table 7.26). However, the situation did improve after 1992. Between 1992-95, production of wheeled tractors rose by 17.5% while for agricultural machinery, sales rose by 7.5%.

Table 7.25 UK production of wheeled tractors, 1990-95

Year	Unit Production	Annual % Change
1990	84,215	9.3
1991	59,159	-29.8
1992	57,892	-2.1
1993	60,747	4.9
1994	67,262	10.7
1995	68,037	1.2

Source: Data obtained from Agricultural Engineers Association (AEA), Economics Department (personal communication)

Table 7.26 Agricultural machinery sales by UK manufacturers, 1990-95

Year	Current Prices (£m)	Annual % Change
1990	439.0	-7.6
1991	423.6	-3.5
1992	455.8	7.6
1993	460.8	1.1
1994	450.7	-2.2
1995	490.0	8.7

Source: Data obtained from Agricultural Engineers Association (AEA), Economics Department (personal communication)

In Grampian there are four main manufacturers of agricultural machinery, only one of which was able to provide any information for the survey, namely Grays of Fetterangus (1972) Ltd., general machinery handling merchants, specialising in grassland machinery, bale handling machinery, etc. Sales are mainly within the UK but some machinery is also exported. As Table 7.27 shows, turnover decreased significantly between 1990-91 and 1991-92 (-12.5% and -2.0 respectively) but this was followed by a dramatic rise of 33% between 1992-1993. Sales fell again between 1993-95 but overall, the company saw turnover increase by almost 11% over the period 1991-95. Numbers employed also fluctuated over this period, falling significantly between 1990-92 but then rising significantly between 1992-94. However, numbers decreased by almost 6% between 1994-95 and over the period 1991-95 overall employment decreased by almost 3%.

Table 7.27 Change in output and employment for Grays of Fetterangus (1972) Ltd, 1991-95

Period	Sales Turnover	Number of Employees
% Change 1990-91	-12.5	-1.4
% Change 1991-92	-2.0	-10.0
% Change 1992-93	33.2	6.3
% Change 1993-94	-7.5	7.5
% Change 1994-95	-8.4	-5.9
% Change 1991-95	10.6	-2.9

It has already been mentioned that the CAP reforms and the GATT negotiations were the probable cause of decreased production and sales between 1990-92. What,

therefore, is the explanation for the sudden, and sometimes dramatic, rise in the years that followed, shown by the figures presented for the UK and also for the Grampian based company?

As discussed in Chapter 4 (Section 4.2), the value of subsidies paid to UK farmers rose suddenly and dramatically towards the end of 1992 as the government abandoned the ERM. Thus what was known as ‘Black Wednesday’ became known as ‘Golden Wednesday’ by farmers. Income to farmers and their spouses¹⁷ rose by 58% in 1993, due mainly to sterling’s devaluation (Maitland, 1995b). In a survey of farmers undertaken in 1993, two-thirds had bought a new tractor (the cheapest costing around £25,000) in the past quarter or intended to do so (Erlichman, 1994). The bulk of the increase in subsidies in 1993 was said to have been spent on clearing debt (Maitland (1995a) notes that farmers reduced their total borrowings by £230 million), and on new machinery e.g. sales of tractors rose by 33% between 1992 and 1993 (Erlichman, 1994).

Three factors explain the 1993 rise in British farm incomes back to their peak levels in the early 1980s: devaluation of sterling, falling interest rates, and large subsidies (Erlichman, 1994). These same factors also appear to explain the sudden rise in production and sales of agricultural machinery between 1993-95, for both the UK in general and for the Grampian based machinery business surveyed here. It would thus appear that the changes in the agricultural machinery industry over this period had more to do with external factors than the MacSharry CAP reforms.

7.4.8 Wholesaling of Agricultural Raw Materials and Live Animals

This is a very fragmented sector that includes wholesalers of materials such as seeds, feeds, chemicals and fertilisers, and live animals. Many of the wholesalers also supply other requisites in addition to their main products. The cut in cereal production was the main feature of the CAP reforms to affect these industries. When the reforms were introduced, it was argued that such reductions would have a domino-type effect on these industries: “the machinery, agrochemical and produce manufacturing companies will be forced to tighten their belts” (*Farming Business*, 1992, p. 26). Furthermore, it was likely that increase in competition would reduce the cost of seed, agrochemicals and fertilisers. This would clearly benefit arable farmers, while livestock farmers too would reap marginal benefits from cuts in feed

prices. However, such changes would be detrimental to the wholesaling industries concerned.

There are a number and variety of wholesalers of agricultural raw materials in Grampian. Four companies from different, but in some ways overlapping, industries provided data for this survey (see Table 7.28). The percentage change in sales turnover for each of the companies surveyed is shown in Table 7.29.

Table 7.28 Surveyed wholesalers of agricultural raw materials and live animals in Grampian

COMPANY	LOCATION	COMPANY DETAILS
North Eastern Farmers Ltd.	Turriff	Agricultural supplies ¹
Robertson Crop Services Ltd.	Turriff	Wholesalers and retailers of agrochemicals (pesticides, herbicides, fungicides)
Towns and Carnie Ltd.	Turriff	Wholesalers of animal health products and retailers of animal feedstuffs, farm equipment etc.
Aberdeen and Northern Marts	Thainstone	Provides extensive livestock marketing service through live and electronic auction sales ²

Notes: ¹ See endnote ¹⁸.
² See endnote ¹⁹.

Table 7.29 Percentage change in output for wholesalers of agricultural raw materials and live animals, 1990-95

Company	Percentage Change in Sales Turnover					
	1990-91	1991-92	1992-93	1993-94	1994-95	1991-95
North Eastern Farmers	-14.7	6.1	13.7	-8.8	6.3	16.9 ¹
Robertson Crop Services	7.1	54.2	19.4	7.0	26.3	149.0
Towns and Carnie Ltd.	14.8	11.4	16.9	11.1	14.6	65.9
Aberdeen and Northern Marts	1.6	-2.8	12.0	-0.1	2.6	11.5

Note: ¹ Because NEF is engaged in such a diverse number of activities (see Endnote 8) the sales turnover figure covers both wholesale and retail.

Between 1990-91, the NEF suffered a decrease in turnover of almost 15%. At the same time staffing levels fell by 16% (see Table 7.31 below). The company believed that such a difficult year resulted from the effect of ongoing proposals and agreements relating to the CAP on the arable and livestock sectors (*NEF Report and Financial Statements, Year Ended 30th June 1991*). Farming confidence was very low with widespread curtailment of on-farm investment. However, both turnover and employees increased significantly over the next two years. Then, between 1993-94 turnover fell again by almost 9%, primarily as a result of a reduction in grain sales due to extremes of weather and of the inherent difficulties and knock-on effects of an exceptionally late, poor harvest. With the summer of 1993 being one of the wettest the north-east had experienced for many years, all crops were affected to the extent that average cereal yields were reduced by more than half a tonne per

acre. For example, reduced output and the variable quality of grain available from the 1993 harvest (the total volume of grain sold fell by more than a third) resulted in a drop of some £7 million in the value of grain traded during the year (*NEF Report and Financial Statements, Year Ended 30th June 1994*). Reduced turnover during this period was also caused by a fall in seed sales as the set-aside regulations resulted in a smaller total market for grass seed. However, at the same time the NEF experienced growth in the feeds sector (assisted by the long winter of 1993-94) and also in the fertiliser sector where sales increased dramatically in the spring of 1993-94, resulting in their highest ever total sales volumes.

As Table 7.29 shows, Robertson Crop Services saw significant increases in sales turnover for each year surveyed. This is despite the fact that the fertiliser industry in many EU countries in the early 1990s was suffering from over capacity and weak demand, with set-aside causing further reductions in demand. It was claimed by some, including Franz Fischler, then Agricultural Commissioner, that the substantial decline in the use of chemical fertilisers and pesticides since the late 1980s was a direct consequence of the CAP reforms (Winter, 1998; Fidgett, 1994). The reforms were also likely to result in decreased pesticide sales due to set-aside (see Fuller-Lewis, 1992) and the introduction of agri-environmental measures designed to encourage extensification and a reduction in chemical use. A 1992 report in *Chemical Outlook International* (No. 9, June 1992) stated that the overall prospects for agrochemicals in Western Europe in the 1990s looked grim. As lower intensity farming increases and smallholdings gain greater official support at the expense of larger farms, reduced sales of pesticides is inevitable. Furthermore, the reforms, dramatically reducing the prices of cereals and other crops, were also further reducing the purchasing power of farmers, already facing problems of falling net incomes and rising input costs (see *Agra Europe*, 19 June 1992, p. E/6-E/7). However, others, notably the European Environment Agency (EEA, 1995), questioned whether the drop in use of fertilisers was altogether due to price signals emerging from the CAP. In addition to the increasing environmental awareness with regard to regulations and agricultural-environmental schemes (Williams, 1994), the EEA noted the decrease in cattle numbers which resulted in less need for cattle feeding crops. Winter's (1998) analysis of fertiliser use in the UK indicated a decrease in aggregate expenditure on fertilisers and pesticides in the period 1993-95, but a slight increase in application rates. He suggests that one possible reason for this pattern is that farmers have been buying more in bulk thus keeping fertiliser

costs down. Also, decreased costs in the arable sector are due largely to the introduction of set-aside which reduced the area of land on which fertiliser is spread in any one year. However, Myers and Parish (1994) noted that the impact on variable inputs in the crops following set-aside was slight. For example, little or no reduction in nitrogen fertilisers occurred as farmers tended to treat crops after set-aside as they did following cereals. In addition, increases in rates of fertiliser application in grassland farming have occurred despite stocking restrictions and extensification in the beef and sheep schemes which may have been expected to result in a notable decline in applications.

As Dawson (1993) noted, following the 1992 reforms the era of striving for maximum output moved into a period of restrained output for both arable and livestock products. But regardless of this the main aim continues to be efficient responsible production and fertilisers will remain as significant contributors to this. Dawson concludes:

...fertilisers will remain the mainstay of efficient crop production. ... even though overall usage may continue to fall for a few years yet, it is not expected that the decline in application rates will continue indefinitely. After all, good high quality yields can only be achieved if soil fertility is sustained and, notwithstanding the recent reforms, yield, quality and profitability are still inextricably linked (p. 4).

For wholesalers of live animals, Table 7.29 above shows that for Aberdeen and Northern Marts, the value of throughput fell by nearly 3% between 1991-92 but then increased significantly by 12% between 1992-93, rising again by almost 3% between 1994-95. Over the period 1991-95, the overall value of livestock sold increased by over 11%. At the same time it is seen that the number of livestock units which rose by almost 4% between 1990-91, decreased every year thereafter (Table 7.30).

Table 7.30 Change in livestock sold for Aberdeen & Northern Marts, 1990-95

	Percentage Change (%)					
	1990-91	1991-92	1992-93	1993-94	1994-95	1991-95
Livestock Units	3.7	-4.5	-3.4	-1.1	-0.6	-9.4

The decrease in livestock sold was partly as a result of the end of the Sheep Variable Premium (SVP) at the end of 1991 which resulted in a chaotic sheep market with an adverse effect on live markets. Also, a reduction in the number of prime cattle sold at all marts was experienced every year which in turn affected livestock units sold per annum. However, in years 1993 and 1995 the drop in

livestock units was compensated for by the rises in livestock prices. Thus, although livestock units sold decreased from 1992-95, the value of throughput has remained fairly healthy over the same period.

In examining changes in employment for these wholesaling companies (Table 7.31), it is seen that all experienced increases over the period 1992-95. However, the particularly high increases experienced by the agrochemicals and healthcare industries is such because numbers started from a very small base. The huge increase shown for Aberdeen and Northern Marts (which shows employment for all the businesses of the ANM Group) is as a result of gaining employees from the expansion of Scotch Premier Meat which acquired two meat plants by 1994. Distortions in the figures have thus arisen but it is still clear from the data presented that employment has risen overall.

Table 7.31 Percentage change in employment for wholesalers of agricultural raw materials and live animals, 1990-95

Company	Percentage Change in Numbers Employed					
	1990-91	1991-92	1992-93	1993-94	1994-95	1991-95
North Eastern Farmers	-16	5	3.9	1.5	-3.7	6.6
Robertson Crop Services	0	0	0	16.7	14.3	33.3
Towns and Carnie Ltd.	33.3	0	0	25.0	20.0	50.0
Aberdeen and Northern Marts ¹	-3.9	5.2	50.7	56.4	1.3	138.8

Note: ¹ Numbers employed by Aberdeen and Northern Marts only was not available so the data relates to employees for the ANM Group Ltd. as a whole. The large increase shown for 1993-94 resulted from the expansion of Scotch Premier Meat Ltd following the acquisition of meat plants in Inverurie and Edinburgh.

In summary, this examination of wholesalers of agricultural raw materials and live animals covered four different companies in different, though related, industries. From the above discussions it is clear that reform of the CAP has adversely affected many of these industries in the EU. The introduction of set-aside led to decreased sales in grass seed and other seeds and also led to decreased fertiliser sales (also affected by the agri-environmental measures introduced). Additionally, these industries have also had to confront other intervening factors, particularly extremes of weather and increasing environmental awareness of agrochemical regulations. However, although in general these industries have significantly experienced the effect of the reforms over the period examined, this has not been the case for the companies surveyed in Grampian. Between 1991-95 the agrochemicals and animal healthcare companies did particularly well with increases in sales turnover of 149% and 66% respectively.

7.5 Summary and Conclusions

This chapter has attempted to show the importance of agriculture-related industries in Grampian and to assess what impact the MacSharry CAP reforms may have had on these industries. CAP reform did not just present changes for the agricultural sector but also for the industries indirectly related to agriculture, which are often directly affected by CAP decisions. Many argued that, overall, the reforms were likely to have an adverse effect on the agriculture-related industries. However, through the survey and subsequent analysis of Grampian industries undertaken here an overall picture has emerged which identifies more positive than negative effects, although in some industries the data gathered was insufficient to enable a complete analysis of changes. The survey also showed that the individual industries differ overall in the way policy changes have affected them. However, as was noted at the outset, not all changes experienced by these industries, be they positive or negative, that have occurred post-1992 can be attributable to CAP reform. Thus, throughout the chapter reference has continually been made towards a variety of non-CAP factors which affected (usually negatively) each of the sectors examined. Such factors included for example, adverse weather conditions, increasingly strict hygiene regulations, BSE, increasing environmental awareness and changing consumer demand. Any analysis of changes to agriculture-related industries must therefore recognise such intervening variables.

In grouping together the results from the whole survey on agriculture-related industries in Grampian, it is shown that, in the main, changes that occurred over the period 1991-95 were favourable. For the companies surveyed who provided sales turnover figures (12 companies in total), **all** showed increases over the period 1991-95, ranging from increases of 9.4% to 224.4%. Table 7.32 below lists these increases and shows an overall average increase of 64.4%. Although this is not a truly reliable figure as in two cases the data covers a period less than the five-year period 1991-95, it does however, give a fairly good indication of how successful these companies have been during this time.

Unfortunately, it was not feasible to compile a similar table for the percentage change in numbers employed because out of 16 companies that gave information on employees, 3 gave estimated figures only, and 4 gave data covering periods less than the 5 years being examined²⁰. Nevertheless, despite these variations 12 companies showed increases in employees (ranging from 4% increase

to 167% increase), 2 showed no change and 2 showed decreases. This again gives an overall indication of the success of these companies during this time.

Table 7.32 Percentage change in output of surveyed companies, 1991-95

COMPANY	% CHANGE IN SALES TURNOVER, 1991-95
Quality Food Products (Aberdeen) Ltd.	9.4
McIntosh of Dyce Ltd.	43.0 ¹
Bain of Tarves	61.3 ²
Donald Russell Ltd.	16.1
Scotch Premier Meat.	147.2
McIntosh Donald Ltd	17.5
Mackie's Limited	224.4
Grays of Fetterangus (1972) Ltd.	10.6
North Eastern Farmers	16.9
Robertson Crop Services	149.0
Towns and Carnie Ltd.	65.9
Aberdeen and Northern Marts	11.5
AVERAGE CHANGE	64.4

Notes: ¹This figure is for 1992-95 as data for 1991 was not available.

²This figure is for 1993-95 as data for 1991 and 1992 was not available.

The chapter began with an examination of employment in the agriculture-related industries in Scotland and revealed an overall decrease between 1993-95. This was in line with forecasts that predicted that CAP reform would have a significant and negative impact on employment in such industries to a greater extent than in agricultural employment. However, in examining employment in the processing and supply industries in Grampian, a different picture emerged. In the food sector (mainly home produced supplies), employment levels increased by 18% between 1991-95 compared to a loss of 14% in Scotland as a whole. For total food processing in Grampian, employment increased by over 2% while Scotland saw a decrease of over 7%. Furthermore, when employment in all agriculture-related industries is examined, Grampian saw an overall fall of just 0.2% between 1991-95 compared to Scotland's fall of almost 7%. The main sectors to experience employment losses were dairy processing, manufacture of agricultural machinery and wholesaling of agricultural raw materials and live animals.

The major impact on agriculture-related industries came through the reforms in the arable sector (mainly the reduction of cereal prices and the introduction of compulsory set-aside) and the livestock sector. In addition, the introduction of agri-environmental measures designed to encourage extensification, was also expected to have an impact on these industries. In the meat sector, reduced feed grain prices

favoured white meats and so the share of the beef meat market was expected to fall as the industry faced increased competition. However, the Grampian beef meat market was not adversely affected as was expected. Instead the beef breeding herd increased and the processing companies surveyed all showed significant increases in sales turnover and increases in numbers employed. Although the data received for slaughterhouses was incomplete, it was nevertheless seen that following 1992, overall turnover improved significantly for two of the main abattoirs (there was insufficient data on the third abattoir to determine an overall increase or decrease).

For dairy processing, it was found that for the Aberdeen and District MMB area, utilisation of wholesale milk fell by nearly 4% between 1990-91 and 1993-94. In particular, milk to manufacture fell by 66% over this period. As was noted, such decreases are partly attributable to changes in consumer demand as a result of public health concerns about high fat content products. It is therefore perhaps surprising to find that the one dairy processor to participate fully in the survey was an ice-cream company who only diversified into this line of business because consumers (for health reasons) opted for more low-fat milk. The surplus cream was used to make luxury ice-cream and sales turnover more than trebled between 1990-91 and 1994-95.

For grain milling, there is only one oat milling company in Grampian. The oats area sown in the region fell by almost 22% between 1991-95, a decrease resulting from the introduction of set-aside and from oats being replaced by spring sown crops, especially oilseed rape with its lower variable costs. However, the oat milling business surveyed showed increases in production of 300% between 1991-95, despite facing challenges as a result of CAP reform and despite difficulties caused by poor weather.

The examination of the Scotch whisky industry showed that the industry is of great importance to Grampian. As whisky is an end product of the cereals industry, it may be suggested that the arable reforms of 1992 could have affected the industry. However, it was difficult to determine what changes may have occurred as a result of CAP reform because of the time lag between whisky production and actual sales. Nevertheless, the analysis here has shown that cereal prices do not tend to determine the volume of whisky produced but rather that barley production relies on whisky production. It would therefore appear that the main restriction on the industry caused by CAP is having to purchase EU grains

wherever possible (although some compensation is provided through the Export Refund Scheme).

It was expected that the animal feeds industry (which is especially sensitive to changes in milk quotas or beef support prices) would be affected by both the livestock and arable sector reforms. An increase in demand for pig and poultry feed was expected, while demand for the dairy and beef sectors was expected to fall. However, as the survey showed, the main problem facing the industry in Grampian was decreased sales of pig and poultry feed following reductions in volume in these sectors. Meantime, contrary to predictions, feed sales for the dairy and beef sectors increased significantly.

For agricultural machinery, the prospect of CAP reform (in particular the cut in cereal production) and the uncertainties associated with it was the likely cause of decreased production between 1990-92. Then, rising subsidies resulting from the reforms and the subsequent devaluation of sterling in the latter part of 1992, led to a significant rise in machinery production as farmers spent a large proportion of the extra money they received on new machinery. Although only one machinery business was surveyed here due to non-response from other companies, it was found that sales increased by 13% between 1992-95 (compared to a national increase of 7.5%), while numbers employed rose by 8%.

In examining wholesalers of agricultural raw materials and live animals, it was found that despite forecasts predicting difficult times for such industries, Grampian businesses in terms of output and employment, fared well. Set-aside and the introduction of agricultural-environmental measures designed to encourage extensification were expected to reduce the area of land on which chemical fertiliser and pesticide would be spread, and to reduce seed sales due to a smaller market. Surprisingly, those businesses involved in agrochemicals did particularly well over the period in question, as did animal healthcare. Although it was found that for livestock sales the number of units sold fell by over 9%, such decreases were compensated by the fact that the value of throughput increased by almost 15%.

Therefore, the main conclusion that emerges from this survey is that, despite predictions to the contrary, the agriculture-related industries in Grampian have fared well since CAP reform took place, even when taking into account the many adverse effects of other external factors outwith the control of these companies.

Having thus examined here and in previous chapters the effects of the MacSharry CAP reforms on agriculture and agriculture-related industries in

Grampian, the next chapter focuses on the extent of farm diversification following the reforms. Diversification is a restructuring strategy, which can provide additional farm income both on and off the farm. Chapter 8 therefore examines types and levels of diversification, assessing whether the CAP reforms have increased the necessity for farmers in Grampian to diversify from traditional farming practices.

Endnotes

¹ The Employment and Training Act 1973 (ETA) allows local authority planning departments to access the names and addresses of establishments, numbers employed and the nature of the activities carried out (within the local authority's area of competence). It further allows the disclosure of statistics to bodies who can demonstrate a need for them (e.g. major research projects). Regional and county data are therefore publicly available (Scotland is classed as a region) but district level data are not because it is felt that "Published aggregate statistics might, in some circumstances, allow for the deduction of the identity of individual enterprises. To avoid this suppression rules [for district level data] are applied" (Partington *et al*, 1997).

² The seven major countries of the EC in 1985 were Belgium, Denmark, Germany, France, Italy, the Netherlands and the UK.

³ A general equilibrium model is an approach typically followed by economists in evaluating the distributional effects of agricultural and trade policies.

⁴ The Census of Employment ran until 1993 and was replaced in 1995 by the Annual Employment Survey (AES) - a sample survey which is the only source of employment statistics for Great Britain analysed by local area and by detailed industrial classification.

⁵ It must be noted from the outset that the data presented in this research was collected before the BSE crisis and the speculation of its link with Creutzfeldt-Jakob disease (CJD) that erupted in the latter part of 1995. This major crisis depressed beef sales in Britain with consumer confidence in beef falling to an all time low, particularly after a new strain of the disease, New Variant Creutzfeldt-Jakob disease (NVCJD) was discovered just months later. As a result the market suffered a permanent decline of roughly 11 per cent (Grant, 1997). The demand for beef was thus dramatically affected, which in turn had a major effect on meat processors. As well as affecting markets and damaging relations between Britain and other member states, the BSE crisis also undermined the stability of the CAP. For a detailed examination of the BSE crisis, which ensued in 1995, see Ford (1996) and Grant (1997, pp. 123-129).

⁶ See Scottish Enterprise/Highlands and Islands Enterprise (1997) for a list and description of the main meat processors in Scotland, including Grampian.

⁷ See Chapter 2 for an explanation of these premiums.

⁸ For example, numbers employed by meat processing companies is significantly higher in the period up to Christmas and New Year than at any other time of the year.

⁹ In Scotland there were three Milk Marketing Boards, namely the Scottish Board, the North of Scotland Board and the Aberdeen and District Board.

¹⁰ For example, see the Federation of United Kingdom Milk Marketing Boards (1993).

¹¹ This is measured either by: (i) taking the value of the industries total outputs (or sales) and deducting the costs of materials from other industries; or (ii) taking the sum of the cost of services, labour and capital which are added to the cost of materials.

¹² The figures relate only to volumes produced by the Scottish distilleries and do not account for output from bottling and blending plants.

¹³ In Scotland, malting barley is grown in the Borders and the north-east and is bought mainly by merchants visiting farms. Indeed, in Scotland 55% of the malting crop is bought under contract by merchants who themselves are contracted by brewers, distillers or maltsters (Bojduniak and Sturgess, 1995).

¹⁴ The top exports sector in Scotland is Office Machinery with sales of £5.97 billion (SCDI, 1997). Exports from the other Electronics sectors account for the second top industry.

¹⁵ Five different types of feed make up the animal feedstuffs market: compound feeds, protein concentrates, straights, additives, and supplements. In addition, there are non-concentrates which are low-energy bulk foods such as hay, straw, milk by-products and brewers' and distillers' grains. See Doyle (1995) for a market definition of the animal feedstuffs industry.

¹⁶ Grampian Country Feeds is one of three feed milling operations within the Aberdeen based Grampian Country Food Group, the UK's largest independent food production company providing a blend of products in the white and red meat sectors. Grampian Country Feeds produces poultry and pig feed for the Group companies within the region (see Table 7.33 below which displays the extent and diversity of the company within Grampian region). As Bojduniak and Sturgess (1995) note, large integrated poultry production companies do tend to have their own feed mills manufacturing compounds for stock kept at nearby sites.

Table 7.33 The Grampian Country Food Group in Grampian

DIVISION	COMPANY	LOCATION
Fresh Chicken	Grampian Country Chickens Ltd.	Banff
Frozen Chicken	Grampian Country Chickens (Bucksburn) Ltd.	Bucksburn
Hatcheries	Grampian Country Chickens (Rearing) Ltd.	Inverurie
Pork	Grampian Country Pork Ltd.	Buckie
Pork Farms	Grampian Country Food Group Ltd. Muirden	Muirden, Turriff
Red Meat	McIntosh Donald Ltd.	Portlethen
Feed Mills	Grampian Country Feeds Ltd.	Banff

¹⁷ Income to farmers and their spouses alone differs to total farm income which includes payments to partners, directors and family workers.

¹⁸ North Eastern Farmers Ltd. (NEF) is an agricultural co-operative, engaged in the manufacture and supply of animal feeding stuffs, the supply of agricultural

fertilisers and other farming requisites, processing and trading grain, cereal processing, and pet food manufacture and distribution.

¹⁹ Aberdeen and Northern Marts is a division of ANM Group Ltd. and is Europe's largest farmer-owned auction company. It provides an extensive livestock marketing service through live and electronic auction sales. There are seven different auction marts, all in Grampian except for the Caithness Livestock Centre in Sutherland. See Chapter 5 for more details on Aberdeen and Northern Marts.

²⁰ McIntosh of Dyce provided employment figures for 1992-95, Mathers (Inverurie) Ltd provided figures for 1993-94, Donald Russell Ltd. provided figures for 1993-95 and McIntosh Donald provided figures for 1994-95.

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Chapter 8

Farm Diversification

8.1 Introduction

This chapter attempts to examine in some detail the concept of farm diversification with a focus on levels and types of diversification in Grampian region. An attempt is made to show what effects, if any, the CAP reforms have had on diversification levels in the region. The chapter begins with a brief look at some of the different definitions of diversification that exist and an examination of the two different types of diversification - on-farm and off-farm (Section 8.2). This is followed by an examination of the extent of diversification in the UK (Section 8.3). The discussion then focuses on agricultural policy changes with regard to diversification at EU and national government levels. This involves an examination of initiatives that took place throughout the 1980s, the Farm Diversification Grant Scheme (FDGS), and the CAP reforms of 1992 (Section 8.4). Section 8.5 then examines in detail farm diversification in Grampian which involves investigating the response to the FDGS in the area and looking at overall diversification levels both on-farm and off-farm. The results relating to diversification from the survey administered to a sample of farmers in the region (the main results of which are examined in depth in Chapter 6) are presented in Section 8.6. This looks at the types of diversification undertaken and the reasons given for diversifying. Finally, the different variables that affect the decision to diversify or not are then examined in order to explain participation levels in Grampian (Section 8.7).

However, it proved very difficult to collect this information. As was found throughout the research as a whole, much information is deemed to be of a confidential nature which local government and other organisations are unwilling to disclose. But more importantly, official statistics on the extent of farm diversification do not exist and as Ilbery (1991, p. 210-11) points out, because the annual agricultural census does not collect information:

there is inadequate knowledge on the extent and distribution of farm diversification, the range of diversified projects undertaken, the types of farms and farmers involved ..., the spatial uptake of specific policy measures, and the resistances to diversification.

One therefore has to depend on the results of national surveys or individual/regional case studies to give an indication of its prevalence, although an assessment of such studies is affected by the variety of definitions used.

With the use of limited secondary data available and the results from the survey of Grampian farmers, this chapter therefore investigates the final part of the hypothesis informing this enquiry (presented in full in Chapter 1):

that the consequences of change wrought by MacSharry on the existing pattern of agriculture was an acceleration of industry change as farmers increasingly engaged in diversification and a variety of alternative farming methods.

In the 1980s, farmers began to find it progressively difficult to increase incomes by increasing production of, often unwanted, food. With farmers also being encouraged to take land out of production, further agricultural restructuring was clearly necessary. There are a variety of ‘farm adjustment strategies’ (Ilbery, 1991) which have been suggested as possibilities for restructuring farm businesses (see Marsden *et al.*, 1989 and Munton, 1990). One such strategy is *farm diversification* – providing an ‘alternative’ source of farm family income, both on and off the farm. Although there is nothing new about the concept of diversification, also known as pluriactivity (see Haines and Davies, 1987; Slee, 1990; Simpson, 1995), it has received considerable attention in recent years from governments, the media and the farming community.

In the late 1980s farm income levels fell to their lowest in almost 40 years. Intensifying income pressures and policy uncertainties caused many farm families to consider diversification at this time. It was becoming clear that in many cases income derived from agricultural activities was not sufficient to ensure a reasonable standard of living for farm households. Therefore many diversified the farm business in an effort to sustain or generate additional farm income. In addition to low incomes, farmers were also having to face the difficulty of increasingly competitive markets. Brun and Fuller (1991) argued that most households on small farms had to consider pluriactivity or else “face extinction” (p. 10). They went on to argue that pluriactivity was a phenomenon which was “...playing a key role in farm household income formation, adjustment and survival” (p. 10). Slee (1990) also suggested that diversification offered “... a potential survival strategy for farm businesses either by generating additional income from non-agricultural sources on the farm or from off-farm employment” (p. 159). As Brunåker (1993) argues, diversification is more often a necessity than a desire.

According to Hutson and Keddie (1995), every day in the UK more than thirty farmers and farm workers leave the industry. And with incomes falling (44% of farm households in their survey reported that the farm was not supporting the household; 20% said it never could) pluriactivity is increasing in importance as a contributor to household income. Gasson (1990) believes that diversification is a possible solution to falling farm incomes provided there are market opportunities present, as well as surplus resources to exploit e.g. labour, unused farm buildings and so on. Benjamin (1994, p. 331) argues that:

Diversification activities, on-farm or off-farm, can allow farmers not to rely exclusively on farming for the household's income. Indeed, in many rural areas, on-farm tourism and off-farm employment have become an important and steady source of income for farm households.

Elson *et al.* (1995) argue that diversification is necessary in order to provide local people in rural economies with wider and more varied employment opportunities. Furthermore diversification can help sustain rural economies.

The 1992 reform of the CAP reinforced the fact that farm diversification was an alternative to be encouraged by government policy. Price support for traditional agriculture was reduced and it was no longer possible for farmers to respond to income pressures as they had previously done, that is by increasing their output of conventional products. As the reform measures were adopted and it became clear that budgetary pressures on the CAP were likely to continue (more so as the modernisation of Central and Eastern European agriculture adds to European food surpluses), it was also clear that farm families would need to diversify their sources of income in order to maintain the same level of income.

8.2 Definitions and Types of Diversification

8.2.1 Definitions of Diversification

The definition of diversification has evolved over time, but there is no uniformly accepted definition of what the term implies. Indeed, McNerney *et al.* (1989, p. 6) argue that the concept is “not amenable to very precise definition” and Ilbery (1991, p. 208) argues that “[diversification] has rarely been adequately defined or conceptualized”. Many writers regard diversification as synonymous with *pluriactivity*, which refers to multiple job holding additional to farming. Others argue that the two terms should be distinguished from one another (see Ilbery and

Bowler, 1993)¹. In addition to definitional problems, it is hard to specify the range and extent of farm diversification because of the large number and heterogeneity of activities involved (see below). Dalton (1990, p. 1) gave his definition of farm diversification as “an ‘enterprising’ venture where resources are committed in the present in the hope of some future net gain”. Slee (1990) argues that a diversified farm is one where:

- 1) on-farm alternative enterprises contribute to the domestic economy of the farm household; and/or
- 2) off-farm income sources contribute to the farm household; and/or
- 3) on-farm consumption of non-agricultural products produced on the farm contributes to household welfare.

Brun and Fuller (1991) define pluriactivity as “... the combination of agriculture with other economic activity by farm households...” (p. 23) or “[t]he spread of family labour activities in addition to conventional farming...” (p. 25).

Regardless of definition, there are clearly two types of diversification: on-farm and off-farm. These two different forms of diversification will now be examined in turn, giving examples for each.

8.2.2 Types of Diversification

(a) On-farm diversification

On-farm diversification can be exceedingly wide-ranging (Bryden, 1994), evidence of which can be seen in Table 8.1 below. For example, production can be diversified away from food into industrial feedstocks (see Mathias, 1994); the successful introduction of rare breeds can generate additional income (see Chisholm, 1996); or asset realisation can occur, for example converting a barn for accommodation purposes results in the value of assets being higher in non-farming use than in farming (see Watkins and Winter, 1988; Darley, 1988; and Wilkinson, 1987)².

Russell *et al.* (1991) argue that diversification is encouraged by a demand for farm based products and services. One type of on-farm diversification is farm-based food processing³. For example, following the disappearance of the Milk Marketing Boards (MMBs) in 1994⁴ and the removal of levies against DIY milk, a

Table 8.1 On-farm diversification opportunities

Type	Possibilities
Retail Farm Shops Craft Centres Pick your own Direct sales Food Processing	Own produce, local produce, franchise Rural crafts, skill or hobby outlet Soft fruit, top fruit, vegetables To trade, sales round, mail order Smoked meats, home cookery, butchery, ice cream, yoghurt
Services Agricultural Non-agricultural Industrial workpace	Contract, supply of requisites, repairs, labour Local authorities, urban/rural dwellers, local business Office, craft, light industry
Sport and Recreation Indoor Outdoor Informal Water-based Equestrian	Bowls, fitness centre Golf, sports pitches Picnic site, farm trail Fishing, sailing Livery, riding stables, pony trekking
Tourism Leisure centres Accommodation	Farm interpretation, exotic/rare breeds, heritage centre Bed and breakfast, self-catering, caravan or camping
Land-Based Crops for industrial use Animal fibres Organic Woodland	Biomass, bio-diesel Goat fibre, wool processing Meat, crop, vegetable Coppice, adventure sports, timber products

Source: MAFF (1994b).

number of landowners have decided to process and sell their own milk (Todd, 1994). Ice-cream making has also become big business for some dairy farmers (*Aberdeen, Grampian and Highland Business News*, 1993; Carruth, 1998). However, one farmer who diversified his dairy farm to ice-cream making noted: “diversification is not for anyone acting out of desperation – you have to do it from a position of strength” (Carruth, 1988, p. 40). This is emphasised by the fact that for this business to set up finance, obtain advice, meet the necessary building and hygiene standards etc., meetings with 30 different officials from 20 organisations took place in the start-up period alone! In general, on-farm processing is small scale: Dunn and Revell (1993) found that only around 2%-3% of all farms in the UK are engaged in some form of on-farm processing. Farm-based accommodation is also a popular form of on-farm diversification and one which involves significant readjustment of business resources (Evans and Ilbery, 1992). It has been an important strategy adopted by some farm households as it can reduce the need to raise income from off-farm activities.

All together, it is estimated that on-farm enterprises in Scotland add 4% to the aggregate income earned from farming (McInerney and Turner, 1991; SOAFD, 1993b). As Mitchell and Doyle (1993) suggest, for some farm businesses, this can

make the difference between surviving and having to leave the industry altogether. However, although on-farm diversification is wide-ranging and popular, it is only one form of pluriactivity and surveys show that in most regions off-farm diversification makes a greater impact on farm household incomes (Gasson, 1988; Shucksmith and Winter, 1990).

(b) Off-farm diversification

Diversification does not necessarily take place on the farm, and may or may not be related to farming. For some farm households on-farm diversification is just not the answer; opportunities are limited and off-farm diversification is sometimes the only option. Gasson (1983) found that more farmers are involved in off-farm diversification than in on-farm diversification. Bateman and Ray (1994) examined farm pluriactivity in Wales and also found the contemporary growth in pluriactivity to be in the form of off-farm jobs. Hutson and Keddie (1995) surveyed family farming in less-favoured areas (LFAs) in Wales and argued that "... it is off-farm work in the local labour market which makes the greatest contribution to household survival" (p. 136). In Scotland, off-farm pluriactivity is also the dominant type – 30.9% of pluriactivity is on-farm (mostly associated with tourism) compared to 83.9% which is off-farm (Hutson and Keddie, 1995).

The number of farm households engaging in some form of diversification appears to be increasing. The next section therefore examines the extent of farm diversification in the UK. As no official data exists, the extent of diversification has been portrayed through use of various national surveys undertaken in the late 1980s and early 1990s. Some data available on off-farm incomes is also presented.

8.3 The Extent of Farm Diversification in the UK

An abundance of studies into diversification were undertaken in the 1980s, a small number of which shall be discussed here. However, as Ilbery (1991) and Gillmor (1995) point out, problems arise when attempting to compare results as different researchers use different definitions and terminology. Nevertheless, bearing in mind the problems associated with conceptualisation, comparing different case studies gives an insight into levels of participation/non-participation throughout the country.

The first study to provide some hard data on the subject was Gasson's survey of farm families with other gainful activities (Gasson, 1986). She found evidence to suggest that part time farming would increase in the UK and that in future "part time farming could be positively encouraged as a means of supporting farm household incomes, in order to keep more families on farms and for environmental reasons" (p. viii). The study emphasised the wide extent of part time farming in England and Wales, its diversity and the secondary role which farming plays in many part-time farming families.

Another major study by DAFS in 1988 provided invaluable data for Scotland (Dalton and Wilson, 1989). It was estimated that 40.4% of Scottish farms were diversified farms. Dalton and Wilson conclude: "This survey has shown that farming is only one of a wide range of earning opportunities for Scottish farmers and their families" (p. 47). Chalmers and Kinloch (1989) further underlined the importance of pluriactivity in Scotland with their study on very small farms.

McInerney and Turner (1991) took an overall view of the studies on farm diversification undertaken in the UK at the end of the 1980s. By examining these together it was possible to determine the extent of farm diversification in the UK. A study of holdings in England and Wales (McInerney *et al.*, 1989) showed, respectively, that 42.4% and 35.5% of holdings were involved in diversification. In Scotland the figure (for full-time holdings) was 23.4% (Dalton and Wilson, 1989) and in Northern Ireland it was only 7% (Magee, 1990). Overall it was estimated that one third of holdings in the UK had diversified in one way or another. In line with other studies, it was shown that the highest proportion of diversified farms were on 'large' farms and the lowest was found on the smallest holdings (see Section 8.7 for a discussion on variables affecting diversification). The overall conclusion was of a diverse array of alternative enterprises being operated on a surprisingly high proportion of agricultural holdings of all sizes and farming types.

In examining non-farm income in the UK, the main source is found to be *Farm Incomes in the United Kingdom*, which is produced annually. This brings together data from the *Farm Business Survey* and the *Inland Revenue's Survey of Personal Incomes* and provides "the best information available on the non-farm earnings of farmers in the United Kingdom" (SOAFD, 1993b, p. 51)⁵. Table 8.2 presents off-farm income and hours worked by farmers and spouses in Scotland for all farm types between 1991/92 and 1995/96. 'Off-farm income' includes income from employment or self-employment off the farm and unearned income from

Table 8.2 Off-farm income and hours worked by farmer and spouse in Scotland for all farm types, 1992/93-1995/96

Averages per farm

Year	Number of farms in sample	Occupier's net income and other farm income (£'000)	Off-farm income (£'000)			Annual hours worked		
			Total	Employment and self-employment	Investments, pensions & other	On-farm	Off-farm	Total hours worked
						Farm work and other activities		
1991/92	314	9.9	4.1	2.2	2.0	2,555	342	2,897
1992/93	367	19.8	4.0	1.6	2.4	2,481	302	2,783
1993/94	348	25.6	4.1	2.0	2.1	2,552	318	2,870
1994/95	399	21.1	2.4	1.6	0.8	2,351	249	2,600
1995/96	464	25.8	5.7	3.2	2.5	2,453	351	2,701

Source: SOAEFD (1996, 1995b), SOAFD (1994b, 1993b, 1992b).

Table 8.3 Off-farm income of farmer and spouse in Scotland for all farm types, by income band, 1992/93-1995/96

Percentage of farms

Year	Zero	Above zero to below £500	£500 to below £1,000	£1,000 to below £2,500	£2,500 to below £5,000	£5,000 to below £10,000	£10,000 to below £20,000	£20,000 and over
1991/92	37	10	7	7	12	13	9	5
1992/93	44	7	7	9	11	11	7	4
1993/94	48	7	7	7	8	10	8	6
1994/95	55	4	5	7	7	9	7	4
1995/96	30	6	7	10	14	16	11	5

Source: SOAEFD (1996, 1995b), SOAFD (1994b, 1993b, 1992b).

investments, pensions and social security. 'Other on-farm income' includes income generated on the farm from activities separate from agriculture. The average off-farm income rose from £4,100 in 1991/92 to £5,700 in 1995/96 although there was a substantial drop to £2,400 in 1994/95. Over this period off-farm income on average accounted for almost 20% of net income and other farm income, clearly contributing quite considerably to household income. In 1992/93 and 1993/94 most off-farm income came from unearned income but this trend was reversed in 1994/95 and 1995/96 when off-farm income came mainly from off-farm employment and self-employment. The number of hours per annum spent by the farmer and spouse working off-farm averaged just over 11% over the period examined. Table 8.3 shows the percentage of farms receiving off-farm income and the levels of that income. The percentage receiving no off-farm income rose from 37% in 1991/92 to 55% in 1994/95 but then fell quite dramatically to 30% in 1995/96. Of those receiving off-farm income, 27% received more than £5,000 in 1991/92, falling and fluctuating over the next three years (22%, 24% and 20% respectively). However, by 1995/96, 32% were receiving income of more than £5,000. Overall, it would appear from these two tables that in general, off-farm activities were financially beneficial to Scottish farmers over this period, clearly becoming more so in 1995/96.

Farm diversification appears to have become increasingly necessary for a variety of reasons. From the above, it would seem that diversification is taking place on between 30%-40% of UK farm holdings and it is likely that this figure will rise over the next decade and that off-farm income will also continue to rise. But it is not just farmers who increasingly turned their attention to farm diversification in recent years. In the 1980s, policymakers too were looking towards diversification as a means of supplementing farm incomes and to aid farm viability in the future. In the past, farmers that supplemented their income from non-farm activities were regarded as eccentric or inefficient (Slee, 1989; Strak, 1989) and policymakers had a tendency to look down on them, excluding them from many agricultural support mechanisms, thus ignoring and discriminating against them. However, changes in EU and national government policy regarding diversification took place in the latter part of the 1980s – a time when policymakers began to take pluriactive farmers more seriously as it became increasingly clear that this form of farm adjustment strategy was one to be encouraged.

8.4 Government Policies

The increasing policy interest in diversification towards the end of the 1980s was partly due to the crisis in the CAP. Both price support and food production had to be reduced, but at the same time farm incomes had to be protected. Supporting farm income diversification had once been a marginal option but had gradually become more central. As Fuller (1990, p. 368) states, pluriactivity was not being seen as a major solution but policy-makers were more aware of its "... potential as an adjustment function in a restructured agriculture". If farmers were encouraged to diversify their income sources then the dependence on producing conventional farm products would be reduced.

8.4.1 Initiatives in the 1980s

In 1985 the Commission produced a consultation document *Perspectives for the Common Agricultural Policy* (CEC, 1985a) which was followed by guidelines in *A Future for Community Agriculture* (CEC, 1985b). It was recognised that the CAP had failed to balance supply and demand and that it had raised problems in relation to environmental, economic and social policy. The Commission pointed out:

In some regions, agricultural employment and activity, even if maintained by subsidies, is simply indispensable if depopulation of the countryside is to be avoided. The maintenance of a significant number of persons in agriculture is not, however, incompatible with the development – which should be encouraged – whereby a part of their income is derived from non-agricultural sources (p. vi).

However, Slee (1989) argues that these Green Papers were far from innovative in terms of promoting diversification. The Commission dismissed alternative enterprises for three reasons: there are not always adequate advisory services; marketing structures are often weakly developed; and, the distorting effect of agricultural policy favours other products. But Slee (1989) argues that none of these factors are unchangeable and believes that it was short sighted of the Commission to condemn alternatives.

Thus in the 1980s the Commission and many western governments, including the UK Government, began to change their agricultural policies as part of their strategy to control over-production and make farmers more responsive to the demands of the market. The escalating budgetary costs of the CAP meant a review and adjustment of support levels to farmers had to be made by member states. With

the introduction of milk quotas in 1984 followed by further agreements on milk and beef in 1986, it was becoming increasingly clear that farmers could not solve their low-income problems and indebtedness by maximising production or shifting to non-quota products. Therefore by the late 1980s both policymakers and farmers had realised the need to adapt to market conditions whilst at the same time considering the rural environment. The debate about agricultural restructuring was reaching a head in the UK. According to Slee (1989, p. ix) the principle assertion at the time was that “a more market oriented industry would need to look at a more diverse set of enterprises in the future”. He believed that diversification was one option which could help solve the problem facing all types of farmers, namely, “how to respond to policy instruments which are seeking a better balance between supply and demand”. In addition to all this, value shifts from economic to ecological issues were also taking place. Environmental pressure groups were keen to demonstrate their concerns over modern farming practices and their effect on wildlife and the countryside. Indeed by the late 1980s environmentalism had become a factor and an instrument of CAP reform.

The policy of promoting farm diversification was first introduced in less favoured areas (LFAs). From 1985 the Agricultural Improvement Regulations included 25% grants for investments in various tourism and craft activities within a farm improvement plan. The Agriculture Act 1986 replaced the 1970 Act and for the first time encouraged diversification into farm-related enterprises which were not really farming (Gregory, 1992). In 1987 farm diversification was further supported with the EC’s Extensification Regulation (1760/87) and the UK government’s ALURE initiative (Alternative Land Uses for the Rural Economy)⁶. Farm diversification was again promoted in 1988 with the publication of the Commission’s paper on *The Future of Rural Society* (CEC, 1988). In the same year Regulation 1760 was replaced by Regulation 1094/88 promoting the set-aside of arable land (where farmers would be compensated) and the extensification and conversion of production.

8.4.2 The Farm Diversification Grant Scheme (FDGS)

In 1988 the UK Minister of Agriculture announced a set of new policy initiatives to encourage alternative land usage, protect the environment and increase farm diversity. MAFF’s Farm Diversification Grant Scheme (FDGS) thus came into force, displaying the Ministry’s commitment to alternative enterprises. It provided

assistance for market research and for initial marketing of new products, allied to capital investment grants. Under the FDGS farms outside less favoured areas (LFAs) were eligible for grants to assist setting up of additional businesses on or adjacent to farms⁷.

Ilbery and Bowler (1993) state that less than 1,000 farmers in England and Wales adopted the FDGS in its first two years. They argued that this response was disappointing from the public policy perspective and go on to identify resistances to the scheme. But as Gregory (1992) notes, some of the forward-looking farmers had diversified long before this scheme was introduced and much diversification was already taking place without grant aid.

Whilst welcoming such diversification initiatives, and recognising that such investment aids would undoubtedly help many farm businesses, Gasson (1988) argued that the farm diversification grants had five main faults (p. 176):

- 1 *They were focused on a narrow range of activities* (mainly farm-centred e.g. accommodation and farm shops, and excluding pluriactivity off the holding);
- 2 *for which demand was likely to be limited;*
- 3 *were most appropriate for the larger farm* – that had the capital, the spare land or redundant buildings, and the marketing skills necessary to take advantage of the diversification grants;
- 4 *implied that farming still took precedence* - to qualify for the scheme a farmer must have farmed for five years or had an agricultural qualification, and he must have spent at least half his working time and derived at least half his income from the holding;
- 5 *were counter to present trends* - the scheme attempted to reverse trends towards a greater proportion of farm household income from work off-farm and unrelated to farming.

Gasson thus argued that overall, the FDGS was farm-centred which complemented but remained subsidiary to the farm business. At the same time the main trend throughout most of the developed countries was towards other off-farm activities, unrelated to agriculture and generating the main source of income.

Ilbery and Bowler (1993) in their study of adopters and nonadopters of the FDGS found that only 36% deemed the grant aid to have been a ‘very’ important factor in their decision to diversify or to expand an existing diversified enterprise; 31% judged it as either ‘not very’ or ‘not at all’ important. They go on to argue:

As with so many grant-aided investment schemes in agriculture, the grant appears either to subsidise farmers in carrying out development schemes they would have completed anyway ... or to encourage those already on the verge of making an investment decision (p. 168).

In 1992 the FDGS came to an end, mainly due to farmers lack of interest in it.

8.4.3 Reform of the CAP

The 1992 MacSharry CAP reforms had several implications for diversification. The reform meant a decline in price supports for traditional agriculture. Full compensation for price cuts was to be provided for three years until 1996. However, after this period and into the longer term, compensation levels would be uncertain, especially as budgetary pressures on the CAP were likely to continue. Set-aside land could not be used for any food crops, making alternative crops more attractive. Premium quotas had a tradable value which in some cases could create capital for new ventures. However, increased premiums on cattle made alternative livestock less attractive.

With the reforms came uncertainties but what did appear to be certain was that farm families would need to diversify their sources of income in order to maintain the same level of income and to remain viable. Hughes (1995, p. 183) writes:

Unless there is some totally unpredictable crisis in our food supplies, the reform of the Common Agriculture Policy will mean that the European Community's farmers will have to rely less on traditional agriculture for the incomes that they have been accustomed to in the past.

Indeed, the Ministry of Agriculture (MAFF, 1994b, p. 4) stated that CAP reform and the GATT agreement were the stimulants of agricultural change and argued that “[l]ike all businessmen, farmers have to react to changing circumstances”.

CAP reform also created opportunities for the support of environmentally friendly farming practices such as extensification and organic farming (Battershill and Gilg, 1997; Slee and Walker, 1994). Although the set-aside and extensification policies of the CAP were mainly devised to reduce agricultural production, they also provided environmental gain. Opportunities for diversification into environmentally beneficial enterprises have arisen as a result of “the broadening of the base of economic activities of farmers, coupled with the growth of environmental values as influences on consumer behaviour” (Walker *et al.*, 1994, p. 239). The green consumer benefits from a variety of diversified enterprises such as organic food production and farm based recreation or tourism. With an increasing demand for environmental goods, many farmers are now producing products to meet such demand.

Environmental conservation is increasingly being regarded as an alternative to traditional agriculture, providing a new source of income for farmers. It has therefore become a growth area in agricultural policy. Hughes (1995) believes that

farmers in LFAs in the UK, although disadvantaged in many aspects of traditional agriculture, are advantaged because in the main they own and farm the most attractive and desirable parts of the UK countryside. Because of the growing emphasis of policy on conservation, there are increasing opportunities for farmers to generate income from this source. There are 28 environmentally sensitive areas (ESAs) situated within the UK's LFAs and so farmers in these regions can expect increased incomes from this source. However, income from these schemes is small in comparison to other CAP expenditures. Hughes (1995) estimates that gross ESA payments in Wales could reach around £155 million over ten years. In comparison, total sheep subsidies in Wales are about £160 million per annum (at 1991 rates). It is therefore clear that environmental conservation payments will not be sufficient, or grow quickly enough to compensate for the price support cuts in traditional agriculture.

In a government publication Elson *et al.* (1995, p. 13) state that "it is government policy to promote diversification in agriculture, subject to environmental safeguards". They state that according to 1994 figures farm diversification was generating an estimated £675 million of revenue in the UK per annum. MAFF estimated that in 1994 almost 80,000 farm-based jobs were already reliant on non-agricultural enterprises (MAFF, 1994b). When EU Objective 1⁸ funds were released in 1995 for farming and crofting businesses in the Highlands and Islands (amounting to more than £24 million) it was emphasised that typical projects likely to gain support would stress diversification of farms and crofts, e.g. conversion of buildings into tourist accommodation or investment in new crops (Fraser, 1995). Similarly, when Objective 5b⁹ status was awarded to north and west Grampian in 1995, most of the money was earmarked to develop small and medium-sized businesses. The scheme was to involve encouraging teleworking, development of tourism *and* diversification of agriculture.

8.5 Diversification in Grampian Region

One of the aims of this chapter was to show whether or not the 1992 CAP reforms had resulted in increased diversification, either on-farm or off-farm, in farm households in Grampian Region. Unfortunately, this has proved to be a difficult task due to a lack of available data. As enquiries were made to the SOAEFD,

Scottish Enterprise, Grampian Enterprise and the Scottish Agricultural College, it became increasingly clear that no official data existed on types and extent of farm diversification in Scotland, far less at a regional level. The Scottish Office was able to provide data on the Farm Diversification Grant Scheme (FDGS) at a regional level, but this scheme came to an end in 1992. The only regional data found was in the form of working reports for the Joint Agriculture and the Environment Programme (JAEP) on *Pluriactivity in the Agricultural Sector in Scotland* (see Davies and Dalton, 1993a and 1993b; Edmond and Corcoran, 1993; Ellis and Heal, 1993; and, Mitchell and Doyle, 1993). The project involved a survey of farm households in three regions of Scotland, one of which was Grampian. Unfortunately, the data for these reports was collected in 1991-92, a period prior to the CAP reforms. Some of the data is nevertheless presented to give an indication of the extent of farm household diversification in Grampian.

Consequently, the only post-1992 data available on diversification in Grampian is that collected in the questionnaire undertaken for this thesis. As was explained in Chapter 5, quantitative information was collected by means of a structured questionnaire administered by face-to-face interviews with a sample of farmers in the Grampian region. The questionnaire was grouped into four main sections. A number of questions relating to on-farm diversification were included in the section headed *Consequences of the 1992 CAP Reforms*. Respondents were not asked questions relating to off-farm diversification. Therefore, it has been possible to portray a general picture of the extent of on-farm diversification in Grampian, and an attempt made to indicate whether farmers are diversifying their farm business as a direct result of CAP reforms.

8.5.1 The Farm Diversification Grant Scheme in Grampian

The Farm Diversification Grant Scheme (FDGS) was introduced in 1988 but continued to exist only until 1992. As mentioned above, the response to the scheme in England and Wales was disappointing. Not surprisingly, the response in Scotland was similar. Table 8.4 and Table 8.5 show the numbers of applications received for both non-capital and capital grants throughout Scotland. For non-capital grants (Table 8.4), 49 applications were received, of which 39 were approved. Out of this Scottish total only one application came from Grampian Region (for a recreational enterprise) accounting for less than 3% of all approved

applications. The capital grant element of the scheme attracted more interest with a total of 162 applications, 87 of which were approved (Table 8.5). Grampian accounted for 8% of all approved applications. These were for enterprises relating to food processing, accommodation, recreation and horses. It is clear therefore that the scheme was not a success in Grampian, nor in Scotland as a whole. One Scottish Office official stated (personal communication):

I think it fair to say that the scheme did not attract a great deal of interest. Consequently it was decided to close the scheme and divert the resources elsewhere.

Nevertheless, as previously noted, many farmers were involved in diversification before this scheme was introduced and much diversification was already occurring without grant aid.

8.5.2 On-Farm Diversification

The *Grampian Guide to Farm Diversification* is a guide aimed specifically at farmers in Grampian which examines most of the practicable opportunities for farm diversification in the region (Smith *et al.*, 1988; Cook *et al.*, 1994 (revised edition)). A wide range of possibilities is presented in this guide, grouped into five categories (Table 8.6). It focuses on farm-based activities that are unconventional but at the same time would complement the more traditional range of crops and livestock. The guide gives possible reasons for diversification but warns that most forms of diversification would only generate a supplementary income in the short term and would rarely be the financial salvation of a failing farm business (Cook *et al.*, 1994). However, Smith *et al.* (1988, p. 2) do note that some farmers who have diversified into unusual enterprises have made attractive profits because they “have looked at the full range of alternatives, kept an open mind, and selected a new activity which matches their personal and their farm’s situation”.

Table 8.4. FDGS: Approved non-capital applications by enterprise

Enterprise	Angus/NE Fife	Borders	Clyde/Central	Grampian	Lothian/W Fife	Northern	North Eastern	Southern	S Western	Total
Food Processing	1	-	-	-	-	-	-	2	*2	5
Farm Shops	1	-	-	-	2	-	1	-	-	4
Accommodation	*1	1	1	-	1	1	1	1	2	9
Recreation	*4	-	-	1	4	-	1	2	1	13
Farm Museum	2	-	-	-	1	-	-	-	-	3
Mineral Water	-	-	-	-	*2	*2	-	-	1	5
Restoration of Antique Furniture	-	-	-	-	-	-	1	-	1	2
Total Approved Applications	9	1	1	1	10	3	4	5	7	41¹
Total Applications²										49

Source: Derived from data received from SOAEFD

Notes: * Denotes one marketing approval included in figure

¹ Including 5 marketing applications

² Including rejections

Table 8.5. FDGS: Approved capital applications by enterprise

Enterprise	Angus/N E Fife	Borders	Clyde/Central	Grampian	Highland	Lothian/W Fife	Northern	North Eastern	Perth & Kinross	Southern	S Western	Total
Craft Manufacture	-	1	-	-	-	-	-	-	-	-	-	1
Food Processing	2	-	2	1	-	-	-	-	1	1	1	8
Timber Processing	1	-	2	-	-	1	-	-	1	-	-	5
Non-Food Production	1	1	5	-	-	-	1	-	-	1	-	9
PYO Sales	-	1	-	-	-	-	-	-	-	-	-	1
Accommodation	8	2	3	2	5	1	3	8	3	1	6	42
Catering	2	-	-	-	-	-	-	-	-	-	-	2
Recreation	-	1	1	3	2	-	-	-	-	-	2	9
Horses	3	1	-	1	-	1	1	-	3	-	-	10
Total Approved Applications	17	7	13	7	7	3	5	8	8	3	9	87
Total Applications¹												162

Source: Derived from data received from SOAEFD

Note: ¹ Including rejections

Table 8.6 Diversification possibilities in Grampian

1. Farming and Forestry
1.1. Deer production 1.2. Alternative poultry production 1.3. Nursery stock production 1.4. Milking Sheep 1.5. Tree production (including Christmas trees) 1.6. Goat production 1.7. Organic farming 1.8. Rainbow trout production 1.9. Rabbit production 1.10. Unusual livestock
2. On-Farm Marketing and Processing Activities
2.1. Ice-cream production 2.2. Farm Shop
3. Leisure and tourism Activities
3.1. Touring caravan sites 3.2. Sporting lets (shooting and fishing) 3.3. Holiday cottages 3.4. Horse livery
4. Industrial
4.1. Storage and letting out workshop space 4.2. Gravel extraction/quarrying
5. Non-food crops
5.1. Specialist oil, fibre and biomass crops for production

Source: Cook *et al.*, 1994.

8.5.3 Diversification Levels

Ellis and Heal (1993) found in their study of Grampian region that the number of farms earning non-agricultural income had more than doubled between 1988 and 1991 and argued that “[n]on-pluriactive farms are assumed to become a ‘thing of the past’” (p. i). Of the 295 farm households surveyed in the region, 90% of the pluriactive farms were involved in pluriactivity since 1970, 66% since 1980 and 34% between 1988 and 1991. Of those surveyed, 10% were involved in pluriactivity before 1970.

In 1989 Dalton and Wilson estimated the distribution of pluriactivity within Grampian to be as follows: off-farm – 33.1%; on-farm – 13.7%; farms with both off-farm employment and on-farm enterprises – 4.9%. Ellis and Heal (1993) found that in 1992 the incidence of farms with both off-farm and on-farm pluriactivity was equal to that of on-farm pluriactivity. Table 8.7 below shows, from Davies and Dalton’s (1993b) study, the percentage of households in Grampian engaged in off-farm pluriactivity, in comparison to Scotland as a whole. It is seen that levels of

pluriactivity in Grampian are slightly higher than the Scottish average: around 34% and 29% respectively.

Table 8.7 Off-farm pluriactivity in Grampian and Scotland

Area	Household Pluriactivity	
	None	Off-Farm
Grampian	62.29	34.42
Scotland	65.11	28.55

Source: Derived from Davies and Dalton (1993b)

In examining off-farm employment, Davies and Dalton (1993a) found that in line with other surveys, more farmers are involved in off-farm jobs than in on-farm jobs (see Table 8.6). For Grampian Region, off-farm jobs were undertaken by nearly 60% of farm families while significantly less (just over 21%) were involved in on-farm enterprises. As Table 8.8 shows, a much higher percentage of farm families in Grampian are involved in off-farm diversification than in the other regions surveyed.

Table 8.8 Households with non-farming activities

Region	Off-Farm Jobs (%)	On-Farm Enterprises (%)
Grampian	59.7	21.2
Dumfries & Galloway	44.2	14.7
Fife	43.6	23.6

Source: Davies and Dalton (1993a)

8.6 Survey Data

The survey administered to a sample of farmers in Grampian region (see Chapter 5) included one section relating to the concept of diversification. Here, respondents were asked if they had considered alternative ways of diversifying their farming operation. Only 11% of all respondents said they had; the remaining 89% had not considered diversification. Those who had diversified from traditional farming practices were then asked to specify what new business activities they were involved in. Some respondents were involved in more than one alternative enterprise and overall, ten different activities were listed (Table 8.9).

Table 8.9 Alternative enterprises in Grampian

Alternative Enterprises	Percentage
Touring caravan/camping sites	32
Farm shop	16
Holiday cottages	12
Bed and Breakfast	12
Sporting lets (shooting and fishing)	12
Golf course/driving range	8
Ostrich production	8
Organic farming	4
Chalets to let	4
Horse livery	4

8.6.1 Reasons for Diversifying

In their studies of diversified Scottish farms, both Dalton (1990) and Wilson (1990) found that respondents had chosen to diversify mainly as a result of a need to generate income (mainly from small low risk investments), finding a use for spare resources, exploiting market opportunities and the influence of individual circumstances. Overall, the main aim of most respondents was to increase their gross income whilst keeping fixed costs as low as possible. They also found that lack of interest in new alternative enterprises was most often restricted by a preference for traditional farming methods, lack of capital, lack of labour, unsuitable location, and lack of interest in diversification. Thus the main constraints on developing on-farm diversification were farmers' attitudes¹⁰ and lack of resources.

Slee and Walker (1994) surveyed farmers in environmentally sensitive areas in the north of Scotland. They found that a variety of factors motivated diversifying farmers but financial motive was the most dominant (67% of respondents). Ilbery's findings (1991) were even more striking where 80% of respondents listed the need to generate additional income from new sources as the single most important reason for diversifying. Personal interest also played a large part in influencing participation. Dalton's (1995) study of diversification in the Scottish Highlands found that "[a]lternative enterprises to farming are financially more attractive than agricultural activities¹¹" (p. 91). In Slee and Walker's study (1994), the factors which deterred alternative enterprises included lack of capital, perceptions of risk, tenancy restrictions and locational disadvantages. Overall it was found that a number of socio-economic factors affect participation in environmental diversification opportunities, including tenure, succession, age, attitudes to farming, capital availability and risk aversion

Therefore, for many farmers engaged in diversification, obtaining additional income was a major factor influencing their decision making. Indeed, Ilbery (1988) argues that many farmers opt for diversification out of economic necessity^{12,13}. Individual circumstances, personal interest and spare resources were also important factors. On the other hand, for some a lack of resources (capital, land, labour etc.) or unsuitable location were factors which prevented them from diversifying. Some however, do not diversify because they prefer traditional farming and cannot be persuaded from this; others have a simple lack of interest in diversification. Ilbery (1991, p. 211) suggests that:

The pattern of farm diversification will depend upon the location of the farm, the facilities on the farm, and most important of all the personality and commitment of the farmer, his wife and the family.

For the Grampian survey undertaken here, respondents were asked why they had diversified from traditional farm-based activities. A list of reasons was provided and respondents were asked to indicate all that applied to them and also to rank their reasons in order of priority. A summary of the reasons provided and the responses received are given in Table 8.10 below.

Table 8.10 Reasons for diversifying in Grampian

Reasons	% of Respondents
Unfavourable economic outlook	4
Growing market for alternative farm products/services	48
Spare buildings/land available	56
Challenge of a new venture	72
Availability of advisory and financial support	44
Reform of the CAP	0

As Table 8.10 shows, the majority of respondents (72%) said one of the reasons they had diversified was because a new farm based venture was a challenge. A large number (56%) diversified because spare buildings, rough land or water courses etc. were available to put to alternative use; 48% believed that there was a growing market for some alternative products and services from farms; and, 44% felt that advisory and financial support was available for diversifying from traditional farming. A need to generate additional income, the predominant factor in the studies mentioned above, was not a reason listed here. Perhaps the reason closest to obtaining additional income listed in Table 8.10 was that of “unfavourable economic outlook”. However, only 4% said they diversified because the economic outlook for most farm commodities was unfavourable. Perhaps surprisingly, no respondent gave reform of the CAP as a reason for diversifying.

The data was collected at a point when the CAP reforms were well established and very much at the forefront of farmers' minds. Despite this, the reforms, whether seen as beneficial or otherwise, were not cited as a reason for diversifying by any respondent.

So for Grampian farmers, *challenge of a new venture* was the most often cited reason for diversifying. However, when respondents were asked to rank their reasons for diversifying in order of priority, the majority of respondents (48%) gave *availability of spare buildings, etc.* as the main reason (Table 8.11). This is probably because farm resources such as space, amenity, watercourses and traditional buildings are all highly valued and it is often possible to convert these assets into income. The second most popular reason was the emergence of a *growing market for alternative products and services* (28% of respondents). For those willing to look beyond conventional crops and livestock, markets for alternative farm products and services can be quite attractive.

Table 8.11 Reasons for diversifying ranked in order of priority

Reasons for Diversifying	Ranking (% of Respondents)			
	1 st	2 nd	3 rd	4 th
Unfavourable economic outlook	-	4	-	-
Growing market for alternative farm products/services	28	12	8	-
Spare buildings/land available	48	8	-	-
Challenge of a new venture	20	40	8	4
Availability of advisory and financial support	4	20	16	4
Reform of the CAP	-	-	-	-

Overall, it would appear that respondents were diversifying out of choice rather than out of necessity. The majority were attracted to diversification as a new challenge and the means to undertake such a venture appeared to be readily available e.g. spare buildings and expanding markets for alternative farm products.

8.7 Variables Affecting Diversification

There are a number of factors which can influence farmers' participation and non-participation in farm diversification¹⁴. Brotherton (1989, 1991) believes that one set of factors that has to be considered is "farmer factors" (for example, *farmer* characteristics and *farm* characteristics). Some of these factors are used here to try

and explain participation levels in Grampian¹⁵. This section therefore examines the various variables that can affect the decision to diversify or not. Through use of crosstabulation, those in the survey that were diversifying their farm business are examined in order to show the type of farm and farmer involved in diversification in Grampian. This allows a comparison to be made between these results and the findings from other studies undertaken in the UK.

8.7.1 Land Type

Magee (1990) found that the incidence of diversification outside the less favoured area (LFA) was almost double that in it. This is partly because of the smaller average size of farm in the LFA, but holdings in the LFA equivalent in size to those elsewhere were still less likely to have any diversified activities in comparison. Hutson and Keddie (1995) also argue that pluriactivity decreases in occurrence from the worst LFA to its lowest levels in non-LFA areas.

The results from the Grampian survey indicate that farmers who have diversified are found mainly in lowland Grampian (60%); in contrast, 28% were found in upland Grampian (the remaining 12% were farmers who farmed in both upland and lowland Grampian). As was noted in Chapter 3, 50% of Grampian's land area is upland, virtually all of which is classed as LFA. It would therefore appear that in this sense Grampian is no different to other areas in the UK where it has been found that levels of diversification outside the LFA are almost double that in it.

8.7.2 Farm Type

The type of farm may influence the development of alternative enterprises. On dairy farms the incidence of diversification has been found to be low (Hutson and Keddie (1995); Ilbery and Bowler, 1993; Magee (1990); Dalton and Wilson, 1989). This is despite the fact that dairy farms are generally larger businesses and despite the possibility of spare capacity due to the introduction of milk quotas. The main reasons for this are that dairying is a demanding, time-consuming and capital-intensive business and thus provides the least opportunity for pluriactivity. There is of course the exception where value is added through processing milk into butter, cheese, ice-cream and yoghurt. For other livestock farms, the incidence of

pluriactivity has been found to be high (Hutson and Keddie, 1995; Ilbery and Bowler, 1993). Indeed diversification tends to favour extensive livestock farming enterprises such as beef or sheep (Ilbery, 1991). Arable farms also tend to have a high incidence of diversification, due largely to farm contracting (Ilbery and Bowler, 1993; McInerney and Turner, 1991).

The results from the Grampian survey are quite surprising in that of farmers diversifying, 44% had dairy cattle, although of this number, only 4% were solely dairy farmers, the remainder being mixed livestock farming (i.e. together with beef and/or sheep). However, in line with the above findings, the incidence of diversification for other livestock farms was high, where 88% of those considering diversification were extensive livestock farming enterprises. In terms of arable farming, 92% of those considering diversification had arable crops, showing a high incidence of diversification as with other studies mentioned above.

8.7.3 Farm Size

In general it has been found that the incidence of diversification increases with farm size. Gasson (1986) found that as farm size increased, farmers' 'other gainful activities' rapidly decreased, tending to rise again on the largest farms. Similarly, Ilbery (1991) found that farms with alternative enterprises tended to be larger than the average farm size for the area. Magee (1990) found that on Northern Ireland farms the incidence of diversification increased as business size increased. Ilbery and Bowler (1993) also found that adopter farms were larger than nonadopter farms. Although there is some conflicting evidence (Dalton and Wilson, 1989; Hutson and Keddie, 1995) the incidence of diversification is greater overall on larger than on smaller farms. This is because larger farms generally have more resources available for alternative uses. It is also more likely that these farmers will have capital or will have no difficulty borrowing money. In contrast, farmers with small farms e.g. less than 200 acres, tend to find that the abilities to diversify are limited. They may find that they cannot participate in alternative enterprises due to a relative lack of land and capital. Furthermore, the small size of the farm limits collateral and borrowing power and due to the considerable time and energy spent on the existing farm business, there is a limit on farmers' opportunities to find and develop new markets. The small farm size structure can therefore be a disadvantage

in the development of diversification. Hampson (1992) quotes one farmer as saying:

Alternative enterprise has been promoted quite rightly as a sensible response to the serious decline in farm livelihoods. But very often it can prove a difficult and frustrating response for the small farmer (p. 20).

The results from the survey undertaken in Grampian correspond with these other UK surveys in that the incidence of diversification is greater on larger than on smaller farms. The majority (52%) of those diversifying had farms of between 20-199 ha; 44% had farms of 200 ha or more, whereas only 4% of those diversifying had farms of less than 20 ha. Diversification thus appears to favour the larger farms in the study area.

8.7.4 Age of Respondent

A number of studies have shown that the age of a farmer may be a highly significant factor in determining participation in alternative enterprises. Tweed *et al.* (1994) studied farmers involved in alternative enterprises in Fife and found that younger farmers are more likely to have alternative enterprises on farm, with a steady decline in proportion as age rises. Benjamin (1994) found that for French farm households the probability of participation in off-farm diversification increases at young ages and then decreases for older ages. Ilbery and Bowler (1993) studied the characteristics of adopters and nonadopters of the FDGS in England and Wales and found that adopter farmers tended to be younger - 46% were below 45 years old, compared to 33% for nonadopters. In comparison however, Ilbery (1991) found that the farmers participating in diversification were those with substantial farming experience: over 70% of respondents were older than 45.

In the main, it would appear that young farmers are more likely than their older counterparts to be involved in diversification. However, in examining the ages of respondents engaged in diversification in the Grampian survey, it is found that the majority are not really young new entrants into the industry: only 12% are aged between 18-35 years whereas 52% are aged between 36-55 years and 36% are older than 56 years. Ellis and Heal (1993) also found non-pluriactive farmers in Grampian to be significantly older than pluriactive farmers. However, it must be noted that it is difficult to compare this survey with other studies due to the small

numbers involved and also because of the way the ages have been so widely grouped.

8.8 Summary and Conclusions

In the 1990s more and more farmers and their families are to be found simultaneously employed in agriculture and other economic sectors. Economic pressures mean that it is becoming more difficult to make a living from farming alone. As conditions favour those able to generate incomes from sources other than farming, many more will be found examining alternatives and diversifying their activities. As Slee (1989, p. 204) suggests:

Diversification can develop in response to positive policy instruments encouraging alternative enterprises or in response to negative policies which have reduced incomes and encouraged diversification as a survival strategy.

For more than a decade now government policy has advocated diversification. The 1992 reform of the CAP brought with it budgetary pressures and for farmers to maintain the same levels of income, diversification seems inevitable for many. It would appear that the promotion of diversification by policymakers is becoming more necessary for two reasons. On the one hand, because additional income from alternative enterprises will enable farmers to survive reductions in agricultural support, public subsidies can be gradually reduced. On the other hand diversification is a means of sustaining the CAP as it relieves budgetary pressure. Furthermore, it serves environmental objectives, and it offers a continuing justification for national and European state intervention. Indeed, many are concerned with the challenge facing the countryside as CAP reform gradually reduces subsidies:

We have got a window of opportunity through the subsidies CAP is still offering. But we need to argue very strongly that any subsidy we have is linked much more towards either environmental or social support rather than straight agricultural subsidy. Farm diversification should be encouraged but it's not the panacea" (Scotland on Sunday, 15/09/96).

In fact, a number of writers point out that diversification is not a panacea (for example, Gillmor (1995) and Illbery (1988)). Haines and Davies (1987, p. 24) argue that "many farmers see diversification as a risk-avoiding strategy which reduces the farm's vulnerability to policy changes". However, they believe that

more often than not, diversification increases the risks faced by the farm business. Strevens (1994, p. 479) argues:

There needs to be a health warning. Diversification is not for everybody and, rather than start something new, many farmers are better advised to stick to what they know best and try to manage their farms better.

Many constraints exist and diversification is only one of the options open to farmers. Diversification alone will not solve the problems of declining agricultural incomes. Bryden *et al.* (1993) believe that there will always be some farmers who will not diversify for a number of reasons - because they are too old, or because they are not able or willing to acquire new skills, or because they do not have or see the opportunities available to them, or because of lack of capital. At the same time there is of course the danger of encouraging too many farmers into some enterprises. Indeed, one danger of diversification is that as more farmers diversify some markets for farm-related enterprises can reach saturation point e.g. farmhouse tourism is in an oversupply situation in many parts of the UK.

Ilbery and Bowler (1993) concluded from their study (and backed by other research findings) that future growth in diversification would only be moderate:

... although diversified enterprises may be very important to the incomes of those farms where they occur, there are few signs that this form of farm business development will provide a widely applicable solution to falling agricultural prices (p. 168).

It is clear that many farmers have still to be persuaded of the concept of diversification and of its variety of available income-development options. Ilbery and Bowler (1993) found a high level of resistance to the concept of diversification. They believe that this (psychological) resistance will only disappear "... if farm incomes come under greater pressure, all other agricultural options are exhausted, and borrowing becomes less financially hazardous..." (p. 168).

Pluriactivity is commonplace in Grampian region. Survey evidence suggests that 30-40% of farm households in the UK are pluriactive with more involved in off-farm employment than in on-farm diversification. From the evidence presented above, it is seen that Grampian region has a similar level of farm households engaged in pluriactivity, with levels actually higher than the Scottish average. One study showed that of the pluriactive farms studied in the region, 90% were pluriactive since 1970 and so the concept is not new to the area.

Chapter 4 showed how the 1992 CAP reform resulted in increased spending in Scotland. Bryden *et al.* (1993, p. 4) argued that the relatively favourable effects

of the reforms on Scottish agriculture “should be regarded as providing temporary breathing space which must be used to diversify the rural economy since these favourable conditions seem unlikely to be permanent”. And it would appear that there are plenty opportunities for diversification in Grampian. Smith *et al.* (1988, p. 2) state that:

Grampian Region presents considerable scope for farm diversification due to its land and water resources and substantial farm buildings, its tourist potential, food processing industries, the small but thriving urban sector around Aberdeen, and good communications with markets further south.

Farmers in the region do seem to be responding to the opportunities open to them with regard to diversification. In the survey undertaken for this research, only 11% of all respondents had considered on-farm diversification (no data was collected on off-farm diversification). It was found that the majority of those who became involved in alternative enterprises did so because they felt the need for a new challenge. But they also made the most of spare land and buildings, and took advantage of the growing market for alternative farm products and services. Furthermore, use was made of advisory and financial support on offer for those wishing to diversify. What was surprising was that no respondent gave reform of the CAP as a reason for diversifying, especially at a time when the reforms were resulting in so many major changes for many.

In conclusion, one would expect to find that reform of the CAP has brought with it the need for farm households to diversify from traditional farming practices. The available survey evidence on diversification in Grampian indicates that the reforms have not affected decision-making with regard to diversification. Farmers in Grampian are diversifying for a number of reasons - CAP reform is not one of them. But as so little data exists on the subject it is hard to come to such a definite conclusion. It is clear that the collection of some form of official statistics on the subject of diversification is long overdue. Without such data, one can only hypothesise on causes and levels of diversification in the future.

Endnotes

- ¹ For discussions on the problems associated with these terms and concepts see Bryden *et al.*, 1992; Ilbery, 1991; McInerney and Turner, 1991; Fuller, 1990; and, McInerney *et al.*, 1989.
- ² For farmers considering on-farm diversification, there are a number of useful guides available which give good practice advice, many of which are government papers, for example: MAFF (1994a; 1994b; 1994c; 1994d), West Country Tourist Board (1992), Country Landowners Association (1991).
- ³ Revell and Dunn (1995) provide a detailed examination of on-farm food-processing in the UK.
- ⁴ See Appendix II.
- ⁵ Note however that as the two surveys use different methods and definitions, the results are not fully comparable.
- ⁶ The UK Government's ALURE package (Alternative Land Uses for the Rural Economy) offered £25 million per annum towards the development of farm woodland, forestry and diversification (Ilbery, 1988).
- ⁷ See Gregory (1992) and Ilbery and Bowler (1993) for detailed explanations of the FDGS.
- ⁸ Objective 1 assists those regions whose development and structural adjustment is lagging.
- ⁹ Objective 5(b) promotes the development of rural areas where agricultural incomes are low, and the level of social and economic development is below average. A £30.7 million programme to regenerate north and west Grampian was adopted by the European Commission in March 1995 (Wright, 1995).
- ¹⁰ See Ilbery (1991) and Battershill and Gilg (1997) for discussions on farmers' attitudes towards diversification.
- ¹¹ These alternative enterprises included fish farming, leisure-based activities such as golf and clay pigeons, tourist accommodation, nursery stock, farm services, forestry, crafts and off-farm work.
- ¹² See Ilbery (1988, pp. 36-37) for a full discussion on other interrelated factors that he believes are necessarily involved in the development of farm diversification.
- ¹³ Ilbery (1988) believes that there are a number of general problems involved in the development of farm diversification that have to be considered before engaging in the diversification process. These include:

- 1 *A change in farmer skills.* Sometimes diversification can mean radical change and some farmers will always avoid free market competition when they have been so accustomed to a protected market system (guaranteed prices).
- 2 *Availability of capital.* Many farmers do not have the resources required to establish alternative enterprises.
- 3 *Lack of advice and research.* More advice on farm diversification needs to be available (see, for example, Dalton and Groves, 1990).
- 4 *Land-use and rural planning.* Green Belt legislation prevents farmers from building new properties or changing existing ones. Thus on the one hand the government is promoting the re-use of old farm buildings, but on the other hand because the Green Belt is protected under the government's ALURE (Alternative Land Uses for the Rural Economy) package, they are seen to be preventing development (see Gregory (1992) for a detailed discussion on planning and other permissions).
- 5 *Health and Safety regulations.* There is a tendency for farmers to be ill-informed with regard to alternative enterprises and the range of conditions that have to be satisfied concerning health and safety regulations, e.g. for on-farm processing (see Slee, 1991).
- 6 *Geographical location of the farm.* Farmers must take into account diversification opportunities offered by the agricultural area, both local and national market competition and potential demand, and the situation of the farm with regard to transport routes and population centres.

¹⁴ See Gillmor (1995) for a detailed discussion of the principal influences which affect the levels of adoption and success of farm diversification.

¹⁵ In addition, Wilson (1997) believes that there are other factors which can influence farmers' decision-making such as: 1) the "information environment" where local networks of, for example, newspapers/agricultural publications, farming events, etc. affect the decision-making process; and 2) the dynamics within the farm district, including factors such as participation of neighbouring farmers, the influence of community leaders, or the spread of innovation within a district.

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Chapter 9

Conclusions and Implications

9.1 Introduction

This thesis began by presenting a historical review of the CAP, covering the period from the inception of the CAP in 1958 to the MacSharry proposals and reforms which were implemented in 1992 (Chapter 2). These reforms, which instigated a shift from price support to direct payments to producers, are described in detail (Sections 2.6 and 2.7). These were the most fundamental reforms undertaken in the 30-year history of the CAP. Nevertheless, as argued in Section 2.8.2, use of the term 'radical' to describe these reforms is debatable. Many argued that the reforms did not go far enough and contained deficiencies which would have to be dealt with in later years (Buckwell, 1993; Tangermann, 1992; Haynes, 1992), including the Commission itself (CEC, 1993a; de Lacroix, 1992). However, this chapter closes with a brief look at the extent of reform success as it stood at the commencement of this research. Production levels in the cereals and the beef sectors had fallen dramatically for which producers were being well compensated and the Commission was keen to demonstrate that the MacSharry reforms were working. The concern of this research was to determine whether these reforms really did work in practice. At a regional level, did these reforms work on the ground?

This research has therefore presented one piece of evidence in examining the impact of the reforms. Through a study of a particular EU region, namely Grampian in Scotland, the research tests out whether the reforms were successfully implemented or not. In Chapter 3, a brief review of literature on Grampian agriculture is presented. This reveals an incomplete picture of the impact of the reforms at a regional level. Although there is some literature available on the impact of the reforms in some member states, there is little available at a regional level throughout the EU and subsequently, research on the impact of the reforms in Grampian is almost non-existent. In the same way, it was illustrated that little information exists on the impact of the reforms on agriculture-related industries in the region, and on levels of diversification following the reforms. Using the methodology described in Chapter 5, this thesis has therefore searched for the

missing pieces to complete the picture of the impact of the MacSharry reforms in Grampian.

Through the use of secondary sources, Chapter 3 established the extent of changes to Grampian agriculture between 1991-95, while Chapter 4 focused on changes in farm incomes and levels of, and dependency on, direct income subsidies. It was shown that production had fallen for the cereal sector and for dairy cattle, feeding cattle and sheep, while the beef breeding herd, pig and poultry sectors increased. Such changes inevitably led to a reduction in farm occupiers and decreased farm labour. Nevertheless, coupled with the devaluation of sterling, CAP reform led to increased farm incomes as subsidy payments rose at a terrific rate over the period of examination.

Data analysis from the survey of farmers in the region was presented in Chapter 6, giving an account of changes in production in the different sectors and presenting farmers perceptions of changes to farming operations and overall reactions to CAP reform. This analysis concluded that the majority of respondents benefited overall from the reforms. Chapter 7 examined the agriculture-related industries in the region employing both primary and secondary data collection methods. Taking into consideration the effects of CAP reform (forecast to be detrimental to many of these industries) and non-CAP factors which can contribute or change CAP reform effects, it was nevertheless found that such industries in the region actually prospered over the period of examination. Finally, to complete the picture, Chapter 8 examined the extent of diversification in the region. CAP reform was expected to expedite industry change as farmers diversified and transferred to alternative farming methods in order to generate additional income. Through use of limited secondary data, it was shown that diversification in the region was indeed increasing but through use of the survey data previously collected on farmers in the region, it was demonstrated that such acceleration was not as a result of CAP reform.

At the beginning of the thesis, it was shown that following the implementation of the MacSharry reforms in 1992, and despite some negative predictions from various analysts, there was some evidence of EU-wide success. What was not clear was whether these reforms were actually successful at a regional level. As described above, this thesis has attempted to fill this gap in the literature and through examination of agricultural change, effects on agriculture-

related industries, and changes in farm diversification levels, a more complete picture has emerged as to the impact of the MacSharry reforms in Grampian.

9.2 Conclusions about Hypotheses

This thesis has shown Grampian to be a region in which agriculture is a vital element for both the rural economy and for the wider Scottish economy. Farming is predominantly arable, but livestock also makes a significant contribution to Scottish production. It was therefore to be expected that significant changes would take place in Grampian's key agriculture areas and also across the agriculture-related industries. This study has examined the MacSharry reforms in detail, testing out the success or otherwise of the reforms in Grampian. It has been shown that the MacSharry reforms indeed resulted in changes in Grampian, with varying degrees of success across the different sectors examined.

However, a common theme of several chapters in this study is that many changes could not be fully attributable to CAP reform. In most of the areas examined non-CAP factors came into play. For example, the weather proved to be a major non-CAP factor affecting both agricultural sectors and agriculture-related industries. Adverse weather conditions can seriously affect mainly arable but also livestock farming which in turn has a knock-on effect upon the agriculture-related industries. However, perhaps the most important non-CAP factor to have affected the outcome of the MacSharry reforms in the UK, and hence Grampian, was the 1992 devaluation of sterling. Its effects are therefore portrayed throughout the thesis. Changing interest rates also played a part in inadvertently affecting outcomes. Policy-makers cannot control such factors and so when the reforms were being adopted it could not be foreseen that non-CAP factors would lead to heightened success in some areas e.g. rise in incomes due to currency devaluation, but not in others e.g. reduced lamb numbers resulting from poor weather.

This section now goes on to summarise the findings for each hypothesis, which were stated collectively in Chapter 1 as follows:

The aims of the 1992 MacSharry CAP reforms were to reduce rising budgetary costs and surplus production and to encourage more extensive farming methods, in turn protecting the environment and reducing surpluses. Whilst continuing to safeguard the basic CAP principles, two main policy instruments would be embraced: lower intervention prices and direct subsidy payments to farmers. In the case of Grampian it is

hypothesised that between 1992-95, the overall effect on agriculture and on the industries indirectly related to agriculture was a positive one. The secondary hypothesis is that the consequences of change wrought by MacSharry on the existing pattern of agriculture was an acceleration of industry change as farmers increasingly engaged in diversification and a variety of alternative farming methods.

9.2.1 Hypothesis 1a

Firstly, it was hypothesised that the MacSharry reforms had an overall positive effect on agriculture in Grampian. In Chapter 3 it was found that in the arable sector, as the area of land set-aside increased, so the area planted with cereals subsequently decreased. This is in line with predictions made when the reforms began to be implemented (Walker, 1993; Buckwell, 1992) and was of course what MacSharry intended. Oilseed rape area increased significantly in Grampian (GRC, 1995; 1992) up to 1994-95 due to its financial benefits, and, furthermore, farm woodlands increased dramatically as farmers appeared keen to create woodlands following the availability of financial assistance created by CAP reform (Crabtree *et al.*, 1997; Crabtree, 1995). For livestock, the reforms affected some sectors more than others. While changes to Grampian's dairy sector were relatively minor (in line with Meyers *et al.*'s (1998) EU-wide findings), the reforms significantly affected the beef sector and the sheep sector, with consequential decreases in production levels. On the other hand, the pig and poultry sectors, although not directly affected by the reforms, benefited significantly, as predicted, from the reformed cereals regime due to reduced feed costs. Subsequently, the reductions in crop production and livestock numbers led to a reduction in farm occupiers and farm labour. While some occupiers increased the size of their farm holdings, others became part-time and became involved in diversification or sought off-farm employment (Copus *et al.*, 1997). These findings are similar to those of Fowler (1996) who examined the overall situation in Scotland. It can therefore be argued that for the arable and livestock sectors, the MacSharry reforms were successful in Grampian in that production on which subsidies would be paid in these sectors was reduced in the region.

Chapter 4 examines farm incomes in relation to subsidies. Rieger (1996) argues that the farm income problem was a major reason for the MacSharry reforms. Indeed prior to reform, farmers' incomes had been declining for 10 years and had reached their lowest levels in almost 40 years. However, MacSharry

shifted farm support away from high guaranteed prices towards direct income payments to farmers. These direct subsidies therefore increased greatly after 1992 and, coupled with the increase in subsidy values as a result of the devaluation of sterling, farmers benefited greatly (Maitland, 1996a, 1996b, 1995b; Erlichman, 1994; Halsall, 1993). Likewise, Grampian farmers (arable in particular) benefited largely from such increases in amounts and values of subsidies (see Tables 4.1 to 4.6). Indeed it was demonstrated that Grampian farmers benefited more than their counterparts in other parts of Scotland. It can therefore be argued that the MacSharry reforms were again successful in Grampian in that farmers' incomes were greatly improved. Such increases were partly attributable to CAP reform but it is clearly emphasised that devaluation of sterling, and to a lesser extent, falling interest rates, were also major external factors in this equation. Nevertheless, this success in terms of increased incomes is partly clouded by the examination of subsidy dependence (Section 4.5). Copus (1997) and Gillanders (1994) both expressed their concern at such high levels of dependency. Shucksmith (1999) found in his study of crofters in the Isle of Skye, that their dependence on subsidies has increased substantially. This thesis has also found this to be the case in Grampian. Increased subsidy dependency was clearly illustrated in Tables 4.7 to 4.8 and Figure 4.1. It was therefore concluded that such a situation led to an undermining of two of the reform objectives, which were to reduce expenditure on support for farmers and to make farmers more responsive to the market place.

The analysis of the survey undertaken for this research was presented in Chapter 6. This analysis presented the personal views of respondents regarding the impact of the reforms, and provided some further evidence to confirm the positive impact of the reforms in Grampian. Overall, the majority of respondents believed that the reforms had a positive impact on their farming business. In all sectors, income changes were favourable with only a minority of respondents claiming to have experienced decreased incomes. The majority believed that CAP reform had not caused major changes to farming operations and that a more stable environment had been created for farmers to improve competitiveness. When asked if, overall, they believed they had benefited from the reforms, 70% of respondents believed that they had benefited while only 18% believed that they had not. Furthermore, of those who believed that they had benefited, the majority were smaller farmers. As the MacSharry reforms were designed to assist the smaller producers in the Community, this aim therefore appears to have been met in Grampian.

The research findings presented in Chapters 3, 4 and 6 thus indicate that the policy objectives of the 1992 CAP reforms were met in that production levels decreased, farmers' incomes increased and smaller producers particularly benefited. Therefore this study provides strong support for the hypothesis that the MacSharry reforms had an overall positive effect on agriculture in Grampian.

9.2.2 Hypothesis 1b

The second part of the primary hypothesis was that the MacSharry reforms had an overall positive effect on agriculture-related industries in Grampian. Because changes to agricultural policy directly and indirectly affect the industries upstream and downstream of agriculture (McCorriston and Morgan, 1998; Bryden *et al.*, 1993), CAP reform was forecast to have a major impact on the agriculture-related industries (Marsh, 1995).

Chapter 7 examines the overall impact of the reforms on agriculture-related industries in Grampian through use of primary and secondary data collection methods. The findings in this research are in many cases inconsistent with the subject literature. For example, in an examination of employment changes in these industries, Copus (1997) and Bryden *et al.* (1993) argue that CAP reform would lead to significant employment losses. Indeed Copus (1997) believes that such an impact would be greater than that for agriculture itself and concludes that CAP reform negatively impacted employment in the Scottish agriculture-related industries between 1991-95. However, in going further and examining the impact at a regional level, this research found that, contrary to predictions, employment in the agriculture-related industries in Grampian did not substantially decrease. Indeed, for food processing, a major contributor to the economy, employment rose by 18% compared to an overall decrease of 14% in Scotland. As shown in Section 7.4.1, the strength of food processing in Grampian lies in its high quality of traditional, local raw materials.

For many of the various industries examined, the reforms were expected to have adverse effects on sales and production. This is illustrated in Table 7.1 which outlines the likely impact of the reforms on the different agriculture-related sectors. However, the data analysis showed that this was generally not the case for the companies surveyed in Grampian. In the main, changes occurring over the period examined tended to be favourable for those concerned. For the Grampian food processing industries (meat processing, dairy processing and grain milling and

whisky production) markets were not negatively affected as predicted. For example, in examining the animal feeds industry, it was found that contrary to the literature (for example, Grant, 1997; Gardner, 1993) the feed companies in Grampian reported increases in dairy and beef feed and, surprisingly, decreased demand for pig and poultry feed. While these patterns were partly attributable to CAP reform, it was also noted that non-CAP factors played a large part, for example, poor weather conditions which increased volumes of feed sold, and reductions in pig numbers as a result of low pigmeat prices and blue ear disease. In examining agricultural machinery, it was found that the company surveyed in Grampian followed the overall pattern of reduced production and sales in the early 1990s, due mainly to CAP reform and GATT uncertainties (Grant, 1997). Then as production and sales rose in the UK in the years following reform (Tables 5.25 and 5.26), so rises occurred in Grampian. Although the reforms had led to an increase in the amount of subsidies paid to UK farmers, changes to the agricultural machinery sector were more related to external factors, in particular, devaluation of sterling which led to unprecedented increases in the value of such subsidies, and falling interest rates (Erlichman, 1994).

In examining wholesalers of agricultural raw materials and live animals, the findings were not consistent with the subject literature. It was forecast that wholesalers of seeds, agrochemicals and fertilisers in particular, would be adversely affected (Winter, 1998, Fidgett, 1994; Dawson, 1993; Farming Business, 1992, Fuller-Lewis, 1992). However, the survey of Grampian industries showed that business fared well over the period, especially so in the agrochemicals and animal healthcare industries. The overall results of the survey in terms of sales turnover (as shown in Table 7.32), emphasises the success of each company over the period examined. All companies surveyed showed increases in turnover, many of which were substantial. Although information obtained on employment changes was limited, the data nevertheless indicated overall success for the surveyed industries. Because Hypothesis 1(a) was supported, and because agriculture is so very closely linked to these industries, such success could be expected. Indeed, when the findings relating to high subsidy levels in Grampian are taken into account (Chapter 4), it is not surprising that many industries, agricultural suppliers in particular, benefited over this period. Windfall profits gave farmers more spending power and allowed them to make new investments. Furthermore, increased demand for goods and services meant increased employment opportunities for the related industries. It

is therefore concluded that the above findings substantiate the hypothesis that the MacSharry reforms had an overall positive effect on agriculture-related industries in Grampian.

9.2.3 Hypothesis 2

The secondary research hypothesis stated that:

... the consequences of change wrought by MacSharry on the existing pattern of agriculture was an acceleration of industry change as farmers increasingly engaged in diversification and a variety of alternative farming methods.

The final part of the study, covered in Chapter 8, examined the concept of diversification, concentrating on levels and types of diversification in Grampian and establishing why farmers were diversifying. Diversification, a restructuring strategy, was indirectly encouraged through the MacSharry reforms as price support for traditional agriculture was reduced. As continuing budgetary pressure on the CAP was likely so was the need to diversify farm income (Hughes, 1995; MAFF, 1994b) and policymakers were quickly beginning to realise the importance of promoting alternatives to farming (Elson *et al.*, 1995). McInerney and Turner's (1991) examination of various national studies conducted in the UK estimated that over one third of UK holdings were diversifying in some way by the early 1990s. The analysis in Chapter 8 attempted to demonstrate levels of diversification in Grampian and to determine whether the effects of the MacSharry reforms had led some farmers to consider diversification as an alternative source of income. Previous research had already shown that a high percentage of farm households in Grampian were diversifying and that this incidence was increasing (Davies and Dalton, 1993a, 1993b; Ellis and Heal, 1993; Dalton and Wilson, 1989). Because no studies had been conducted on regional levels and causes of diversification after the implementation of the MacSharry reforms, this analysis depended on the results of the main survey carried out on Grampian farmers. The survey, which examined on-farm diversification, found that 11% of respondents had considered alternatives. In examining reasons for diversifying (Section 8.6.1), general research has shown that the main reason tends to be a need to generate additional income (Slee and Walker, 1994; Dalton, 1990; Wilson, 1990; Ilbery, 1991; Ilbery, 1988). In this survey, respondents were given a list of reasons as to why they had diversified and the results revealed that farmers were diversifying predominantly because they were

attracted to the challenge of a new venture (72% of respondents). The need to generate additional income was not a factor listed, and perhaps the closest to this was the reason of 'unfavourable economic outlook'. But yet this reason was only cited by 4% of respondents. The most surprising result was that no respondent cited reform of the CAP as a reason for diversifying, even though the survey was conducted after the reforms were well established and was still attracting much media attention. Overall, it was found that respondents were diversifying not out of necessity but primarily out of choice and in order to make use of spare farm resources. It was therefore found that while diversification was increasingly common in the region, CAP reform did not appear to be a major causal factor in diversification from traditional farming practices. This last hypothesis was therefore falsified.

9.3 Implications of the Research

The findings of this research have questioned the validity of some of the initial CAP objectives as stated in Article 39.1 of the Treaty of Rome (see Chapter 2, Section 2.2.1). To re-quote Burtin (1987, p. 64), "[t]he success or failure of any policy must be judged in terms of the achievement of its objectives". Prior to the MacSharry reforms, it was clear that the CAP objectives had not been achieved (Section 2.3.3). Nevertheless, the long-standing CAP objectives have remained unchanged since 1958 and were further uncontested by MacSharry in 1992. After more than four decades of stable objectives, yet diverse methods of trying to achieve them, their appropriateness to current economic and social conditions should be examined.

The MacSharry reforms aimed to cut the budgetary cost of the CAP and reduce production of surplus food through price cuts and here it has been shown that production in Grampian was reduced in certain key areas. Farmers in turn were to be compensated for these price reductions through direct aid subsidies, a system that policy makers believed would provide producers with a more secure and stable future. Indeed, it is argued that although the objectives carry equal weight, that of ensuring a fair standard of living for farmers (CAP objective two) has always had precedence over the others (Daugbjerg, 1999; Smith, 1990). The Commission stressed in its 1991 *Reflections* paper that CAP reform must safeguard farmers'

income (CEC, 1991a) and MacSharry promised to continue to protect the idea of compensation for price cuts (*Agra Europe*, 8/5/92, p. E5).

Total direct subsidies to producers in Grampian rose by 316% between 1991-95 (Chapter 4). In examining total direct arable subsidies paid to farmers in the region, it was found that payments had risen from £1.5 million in 1991 to £46.8 million in 1995, an incredible increase of 2,979%. On the surface this may indicate that farmers were receiving a 'fair standard of living'. However, during the same period net farm income excluding subsidies dramatically declined as shown in Table 4.7. This suggests that CAP reform did little to ease the fundamental financial problems facing farmers. This period of highly fluctuating incomes clearly represented a very unstable time for farmers which, furthermore, is not consistent with the creation of a stable market, as the third CAP objective states.

As demonstrated in Chapter 8, the MacSharry reforms were expected to lead to an increase in farm diversification as compensation levels after the implementation period were uncertain and as alternative crops on set-aside land became an attractive option. However, the findings of this research suggested that although farmers in Grampian were diversifying, CAP reform was not the cause of such change. This is not surprising given the levels of increase in the amount of subsidies enjoyed by farmers during this period, which would not have encouraged or made it necessary for them to diversify.

One further element of the MacSharry reforms was to aid the smaller, and by implication, poorer producers. Although the modulation concept originally proposed had been abandoned as a result of fierce opposition from the Community's larger farmers, the reforms did exempt the smaller producers (producing less than 92 tonnes of cereals) from set-aside requirements. The survey conducted on Grampian farmers defined smaller producers as those with less than 200 acres. The analysis suggested that these smaller producers benefited more from the reforms, particularly in terms of income changes, than their larger counterparts. Yet to promote the policy objectives it could be argued that the CAP reforms should have been encouraging those producers which show greater productivity, have the potential to create a fair standard of living, encourage stable markets, supply and prices. In reality these are more likely to be the larger, more efficient producers who are perhaps more economically viable. The promotion of smaller producers may have a destabilising effect on the agricultural industry by disadvantaging these larger producers, threatening their continued operation in favour of less efficient

small producers. The end result of this policy to the consumer is a higher true cost of agricultural produce, whether directly in farm produce prices or indirectly through the cost of subsidy. This is not consistent with the fifth CAP objective: "to ensure that supplies reach consumers at reasonable prices". Furthermore, it is argued that if, as found in Chapter 3 (Section 3.5.4), the tendency is for medium sized farms to amalgamate to form larger more efficient farms, consideration could be given to policy changes encouraging this form of development. In the longer term fewer holdings that are larger and more efficient should lead to cheaper produce and less requirement for subsidy, benefiting both consumer and taxpayer.

Therefore, regardless of the remaining validity of the original treaty objectives of the CAP, the findings of this research suggest that the reform outcomes were not consistent with these objectives.

Finally, this research has shown that not all factors affecting the success or failure of a particular policy are within the control of the policy makers. Factors such as international exchange rates, differing taxation and excise duties, cost of living, weather, disease, consumer tastes and demands all affect the economic viability and sustainability of farms, regardless of size. Without the removal of some of the differences that are potentially under the control of member governments, such as through the single currency and closer EU integration, with possible tax harmonisation, it is difficult to see how the three basic principles of the CAP (market unity, Community preference and financial solidarity) can be achieved.

9.4 Further Research

In light of the above discussion, it is proposed that further research should cover:

- (i) other regional studies to determine the effectiveness of the reforms over the rest of the EU; and
- (ii) a study into the appropriateness of the original CAP objectives in the twenty-first century, as discussed in Section 9.3 above.

9.4.1 Need for similar studies

As noted in Chapter 1, it has been found that much of the literature on CAP reform relates to agricultural policy-making, interest group interaction and EU-international relations in light of the GATT negotiations. This thesis was not about

such issues but about the implementation of the reforms and whether they have worked out in practice. It was found that little had been written on the overall impact of the reforms in the different member state regions. This study has therefore made a contribution to the literature on the CAP by examining the implementation of the 1992 MacSharry reforms in Grampian region and the subsequent impact of these reforms, not only on agriculture itself but also on the agriculture-related industries and on farm diversification levels. This analysis has therefore served to further the debate on agricultural policy and scholarship on the CAP. However, there is a need for similar studies on comparable or different EU regions in order to assess whether the findings presented here are isolated or if they are supported by research conducted elsewhere.

This research established that there has been, and continues to be, a definite lack of research undertaken on agriculture-related industries at both national and regional levels. Where official data does exist (for example, Census of Employment data) regional figures are of a confidential nature and so cannot be published. Developments and changes to agriculture greatly influence the supply and processing industries, and it is therefore important that the broader implications of policy decisions on agriculture-related industries is known, such as the effects of policy encouraging diversification.

In a similar way there is limited general research on farm diversification post-MacSharry, especially at a regional level. Although data is available on non-farm income and hours worked off farm (derived from SOAEFD annual surveys of around 400-500 Scottish farms), there is "inadequate knowledge" (Ilbery, 1991, p. 210) on the extent and range of diversification and the features associated with its development. This empirical research has made some general contribution in an area where data is deficient and shown the need for future research. Although diversification can increase farm incomes, it is only one form of farm adjustment strategy and, as noted previously, it is not a panacea. Nevertheless, diversification has structural and spatial implications for local, regional and national policy. It is an increasingly substantial feature of the rural scene and future research into this area is required. It is suggested that the following issues require future attention:

1. The extent of diversification;
2. The range of diversification activities employed;
3. The types of farm and farmer involved in diversification;

4. The resistances to diversification e.g. farmers' attitudes, planning constraints, etc;
5. The role of advisory services in advancing diversification;
6. The other types of 'farm adjustment strategies' being undertaken by farmers.

Diversification has important policy relevance as post-productivist agricultural policy instruments have meant that new sources of income for farm families and new uses of farmland are required. Therefore, existing diversification measures need to be reviewed, their impacts appraised, and an investigation carried out into how aid can best be targeted. There is thus a need for comprehensive and imaginative policies to encourage farm diversification.

9.4.2 Need for revised CAP objectives

Fennell (1985, p. 259) argues that because the CAP objectives are rarely if ever discussed then reforms "will prove no more than cosmetic and will fail to reach the root of the problem". Agriculture is an important part of the EU economy, both in terms of employment and output, and the implications of any policy change needs to reflect the sectors' overall importance. The cost of the CAP and its effects are being called into question by many and if the EU is to have an efficient and sustainable agricultural industry the basic principles and objectives of the CAP need to be reviewed. However, if changes to CAP objectives are to be effectively secured, consideration must also be given to the institutional framework of CAP decision-making which itself forms barriers to radical change.

Therefore, because past trends indicate that policy-makers are unlikely to fundamentally reform the CAP in the near future, it is proposed that a long-term strategy be adopted with the aim of providing:

1. confidence to efficient farmers to remain in the industry, thus ensuring stable supplies and employment;
2. environmental safeguards, e.g. farming practices which protect the landscape or promote wildlife, etc.;
3. reduced real cost of produce, through reduced burden on taxpayers;
4. lower administration costs and reduced bureaucracy burden;
5. a European agricultural industry which can compete in a global market place.

In conclusion, this research generally gives the impression of a CAP reform success story. In Grampian, over the period studied, production fell as was intended, incomes generally rose and smaller producers fared especially well. Agriculture-

related industries in the region were not adversely affected as predicted; rather they appeared to prosper. Diversification, although becoming increasingly popular, was not occurring because farmers were forced into it as a result of CAP reform. Having therefore focused on one agriculturally dependent region in the EU, using relevant data collection methods, it has been found that, in the main, the MacSharry reforms did work in Grampian. Decisions made by policy makers in Brussels, although remote from Grampian, did appear to work in the region, although, it is clearly indicated that the overall success of the policy in the region had much to do with external non-CAP factors, in particular the positive effects of devaluation of sterling.

This research began by examining the evolution of the CAP from its inception in 1958 to the MacSharry reforms of 1992. Further reforms, with particular regard to enlargement to Eastern Europe, have already taken place and ongoing evolution of the CAP seems certain, as additional complex policy issues are likely to arise. However, it has been shown that to date reforms have not altered the fundamental difficulties facing the European agricultural industry, in that without subsidies the agricultural sector is not sustainable. Forty-two years of the CAP, marked by a history of moderate reforms, has led to an industry heavily dependent on financial assistance. The CAP may itself have become a barrier to attaining a stable, self-sustaining industry. Yet it is unlikely that fundamental reform will be possible except in the event of a severe agricultural crisis.

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**Survey on the Impact of EU Agricultural Policy on Agriculture
in Grampian Region**

Questionnaire to farmers in Grampian Region

THE IMPACT OF EU AGRICULTURAL POLICY ON AGRICULTURE IN GRAMPIAN REGION

1. FARM DETAILS

- (1) You are: (Please circle)
- 1 Full time occupier 2 Part-time occupier 3 Other (Please specify)
- (2) You are: (Please circle)
- 1 18-35 years 2 36-55 years 3 56 years or over
- (3) What is the size of your farm? (Please circle)
- 1 Up to 20 hectares 2 20-199 hectares 3 200-1000 or more hectares
- (4) Where is your farm located? (Please circle)
- 1 Upland Grampian 2 Lowland Grampian 3 Other (Please specify)
- (5) What is your agricultural land used for? (Please circle all that apply)
- 1 Grass for mowing 2 Grass for grazing 3 Rough grazing 4 Wheat
- 5 Triticale 6 Barley (winter) 7 Barley (spring) 8 Oats
- 9 Oilseed rape 10 Peas 11 Seed potatoes 12 Earlyware
- 13 Maincrop 14 Turnips 15 Crops for stock feed 16 Soft fruit
- 17 Vegetable for human consumption 18 Bulbs 19 Fallow
- 20 Other (Please specify).....
- (6) What forms of livestock do you rear? (Please circle all that apply)
- 1 None 2 Dairy cattle 3 Beef cattle 4 Sheep
- 5 Pigs 6 Poultry 7 Goats 8 Other (Please
- specify)

2. CONSEQUENCES OF THE 1992 CAP REFORMS

CEREALS, OILSEEDS AND PROTEIN CROPS

(7a) Do you have land set-aside? (Please circle)

- 1 No (Go to 8) 2 Yes (in rotation) 3 Yes (non-rotationally)

(7b) If so, how much of your land is set-aside? (Please circle)

- 1 Less than 15% 2 15% 3 More than 15%

(8) How has your income derived from cereals, oilseeds and protein crops been affected by the relevant CAP changes, taking into account compensation paid for the reduction in institutional prices and for land set-aside? (Please circle)

- 1 No real change 2 Income increased 3 Income decreased 4 Variable changes

(9a) Have you moved away from cereals towards oilseed rape in recent years? (Please circle)

- 1 No (Go to 10) 2 Yes

(9b) If so, could you please state why

.....

BEEF

(10) How has your income derived from beef production been affected by the 15% reduction in the beef support price, taking into account compensation paid through increases in the suckler cow premium and the special beef premium? (Please circle)

- 1 No real change 2 Income increased 3 Income decreased 4 Variable changes

DAIRY

(11a) How has your income derived from dairy production been affected by the reduction of milk quotas, the reduction in milk and butter prices and the abolition of the milk co-responsibility levy? (Please circle)

- 1 No real change (Go to 12a) 2 Income increased (Go to 12a) 3 Income decreased

4 Variable changes

(11b) If your income from milk has decreased, has this been balanced by the decrease in feeding costs? (Please circle)

- 1 No 2 Yes

SHEEP

(12a) How has your flock size changed since 1991? (Please circle)

- 1 No real change 2 Flocks increased 3 Flocks decreased 4 Variable changes

(12b) How has your income derived from sheep farming been affected by the relevant CAP changes, taking into account the fall in price of cereal-based foodstuffs as a result of CAP reform? (Please circle)

- 1 No real change 2 Income increased 3 Income decreased 4 Variable changes

'ACCOMPANYING MEASURES'

(13a) Have you become involved in production techniques which protect the environment, landscape and natural resources? (Please circle)

- 1 No (Go to 14a) 2 Yes

(13b) If so, please circle all those activities that you are involved in:

- 1 Organic farming 2 Environmentally friendly production methods
3 Extensification by an increase in the area devoted to the present crop of livestock
4 Environmental upkeep of abandoned land
5 Setting aside land for at least 20 years for environmental purposes
6 The management of land for public access and recreation
7 Other (Please specify)

(14) Since 1992, have you considered afforestation and the development of forestry activities on farm as an alternative use of agricultural land? (Please circle)

- 1 No 2 Yes

DIVERSIFICATION

(15a) Have you considered alternative ways of diversifying your farming operation? (Please circle)

- 1 No (Go to 16) 2 Yes

(15b) If so, what new business activities are you involved in? (Please specify all)

.....
.....

(15c) What were your reasons for diversifying from traditional farm-based activities? (Please circle all that apply and rank in order of priority)

1 The economic outlook for most farm commodities is unfavourable

2 There is a growing market for some alternative products and services from farms

3 Spare buildings, rough land or water courses etc. were available to put to alternative use

4 A new farm based venture was a challenge

5 Advisory and financial support is available for diversifying from traditional farming

6 Reform of the Common Agricultural Policy

3. OTHER CONSEQUENCES OF THE REFORMS

(16) How has agricultural labour on your farm been affected since 1992? (Please circle all that apply).

(a) Full-time workers 1 Increased 2 Decreased 3 No change

(b) Part-time workers 1 Increased 2 Decreased 3 No change

(c) Hired labour 1 Increased 2 Decreased 3 No change

(d) Family labour 1 Increased 2 Decreased 3 No change

(17a) Have you had to reduce the amount of machinery (capital equipment) owned or leased in order to cut fixed costs? (Please circle)

1 No (Go to 18a) 2 Yes

(17b) If so, has there been a move towards shared ownership of some machinery in an effort to spread costs over a number of holdings? (Please circle)

1 No 2 Yes

(18a) Do you use machinery rings or labour rings for your own use? (Please circle all that apply)

1 No 2 Use machinery ring 3 Use labour ring

(18b) Do you contribute machinery and/or labour to these rings? (Please circle all that apply)

1 No 2 Yes - machinery 3 Yes - labour

4. GENERAL

(19) How extensive are the changes you have had to make to your farming operation as a result of the CAP reforms? (Please circle)

1 No changes required 2 Some changes required 3 Major changes required

(20) Do you believe that the new CAP has created a more stable environment for farmers to improve their competitiveness? (Please circle)

1 No 2 Yes 3 Don't know

(21) To what extent are you aware of new developments in the CAP from Brussels? (Please circle)

1 Not aware 2 Fairly aware 3 Very aware

(22) Overall, do you believe that you have benefited from the recent CAP reforms? (Please circle)

1 No 2 Yes 3 Don't know

APPENDIX II

Survey on Agriculture-Related Industries in Grampian

The companies contacted for the survey on agricultural related industries in Grampian are listed in Table A1 below.

Table A1. Companies contacted for survey on Grampian agriculture-related industries

COMPANY	LOCATION	TYPE
Grampian Country Food Group Ltd.	Turriff	Meat Processors
Bain of Tarves	Ellon	Meat Processors
McIntosh of Dyce	Aberdeen	Meat Processors
Donald Russell Ltd.	Inverurie	Meat Processors
Quality Food Products (Aberdeen) Ltd.	Aberdeen	Bacon Processors
Aberdeenshire Poultry	Ellon	Poultry Processors
Scotch Premier Meat Ltd.	Inverurie	Abattoir
Mathers (Inverurie) Ltd.	Inverurie	Abattoir
McIntosh Donald Ltd.	Aberdeen	Abattoir
Kepak Buchan	Turriff	Abattoir
Millers	Grantown-on-Spey	Abattoir
Robert Wiseman and Sons Ltd.	Aberdeen	Dairy
Aberdeen Milk Services Ltd.	Aberdeen	Dairy (Farmer-owned co-operative)
Mitchell's Inverurie Dairy	Inverurie	Dairy
Mackie's Ltd.	Rothienorman	Dairy (Ice-cream Manufacturer)
Harbro	Turriff	Animal Feeds
East Coast Viners Grain	Stonehaven	Animal feeds
Grampian Country Feeds Ltd.	Banff	Animal Feeds
Grampian Oat Products	Boyndie	Oat Milling
North Eastern Farmers	Turriff	Agricultural Supplies
Dalgety Agriculture Ltd.	Turriff	Agricultural Supplies
Bibby, J. Agriculture Ltd.	Thainstone	Agricultural Supplies
Allied Grain (Scotland) Ltd.	Fraserburgh	Seed Wholesaler
Glencore Grain UK Ltd.	Stracathro	Seed Wholesaler
Towns and Carnie Ltd.	Turriff	Animal Healthcare
Robertson Crop Services Ltd.	Turriff	Agrochemicals
Dalgarno Chemicals and Oils	Kintore	Agrochemicals
Aberdeen and Northern Marts	Thainstone	Livestock Auctioneers
Huntly Auction Mart Plc	Huntly	Livestock Auctioneers
Marshall Trailers	Aberdeen	Agricultural Machinery Manufacturer
Fraser Agricultural (Rothienorman) Ltd.	Rothienorman	Agricultural Machinery Manufacturer
Grays of Fetterangus (1972) Ltd.	Mintlaw	Agricultural Machinery Manufacturer
Alex. Duncan (Aberdeen) Ltd.	Aberdeen	Tractors, Tractor Cabs

Milk Marketing Boards

The years following the First World War were a time when dairy companies were merging and growing in size. Farmers were trying to obtain fair prices but their individual and uncoordinated efforts were not maintaining their incomes. Milk Marketing Boards (MMBs) emerged following the Agricultural Marketing Acts of 1931 and 1933. These Boards were to be responsible for all the milk produced by a dairy farmer. They would sell the milk on his behalf, the income from which would be pooled and the monies distributed equally in proportion to the amount of milk assigned. The Aberdeen and District and North of Scotland Schemes came into being in 1934.

The Boards were essentially co-operatives of dairy farmers, with legally constituted powers. A producer selling milk had to be registered with his local Board and had to sell his milk solely to that Board or through its agency. The Boards then had a statutory obligation to buy and find a market for all the milk offered to them. Producers could only obtain exemption from the Schemes if their milk production had not exceeded an average of 100,000 kg per year for the previous 3 years, and if they wanted to sell at least 75% of their milk by retail to the public.

On 1 November 1994 the Milk Marketing Scheme was revoked. The Boards were replaced by voluntary dairy co-operatives, responsible for selling the milk produced by its members. The successor bodies to the various Boards essentially became farmer-owned co-operatives, membership of which is open to any milk producer on a purely voluntary basis. In Grampian, Aberdeen Milk Company Limited replaced the Aberdeen and District MMB.

As well as these successor co-operatives, other competing organisations also began to offer to purchase milk from producers. Now dairy companies can buy milk either direct from milk producers or through an intermediary organisation managed jointly by the company and producers.

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