End of Project Report

Evaluation of supply control options for beef

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Acknowledgements

This report is a summary of research emanating in response to the many EU agricultural policy initiatives and responses to the volatile market developments in the cattle sector throughout the latter half of the 1990's and for the early years of the new millennium. This was a period of unprecedented structural changes in policy which required novel approaches and responses using a range of research techniques and multidisciplinary expertise.

The research findings summarised in this report are the product of the expertise provided by a cohort of collaborators additional to the authors of this report. Throughout the research valuable observations and insightful comments were freely provided by a number of Teagasc research and advisory staff, and especially the help and support provided by research colleagues in Rural Economy, Grange and Oakpark together with Bernard Smyth and Liam Fitzgerald of the advisory services. Valuable comments and feedback was also provided by Department of Agriculture officials, individual farmers and a range of experts in response to the many formal presentations made at national and international conferences. An acknowledgement is also due to Tony McGarry for his detailed proof reading of this report. The final interpretations and any errors are, of course, the responsibilities of the authors.

Executive Summary

The incomes of Irish cattle farmers benefited greatly from the reform of the CAP for beef and cereals in 1992 and more recently under Agenda 2000. In both of these reforms the institutional support prices were reduced and direct payments (DPs) were used to compensate farmers for the price reductions.

For cattle farmers in Ireland the actual economic outcome following the 1992 reforms was contrary to expectations because the farm prices for beef, cereals and concentrate feed remained almost static. This was due to the combined consequences of unforeseen changes in the EU market balance for cereals and beef which were mainly weather induced, and the impacts of exchange rate developments in conjunction with agri-monetary adjustments. As a result farmers in Ireland enjoyed a "windfall gain" with greatly increased revenue from animal-based Direct Payments (DPs) without incurring the corresponding reduction in cattle prices. In fact it was not until the BSE crisis in 1996 and the consequential collapse in beef prices and the re-nationalisation of markets that the full implications of the reduction in the institutional support arrangements began to impact on cattle prices and feed costs in Ireland.

A comprehensive review of efficiencies and competitiveness in Irish cattle production concluded that the poor margins and incomes derived from cattle farming in Ireland were not the result of poor technical performance or the inability of cattle producers to adjust to external signals. The income problems were largely a reflection of the EU policy for milk and beef and the inadequate scale of operations for most of the beef enterprises in Ireland, (Dunne 1996f and Dunne *et al* 1997a, b).

Following a detailed review of the constructs of EU policies for beef, the research showed how the major structural weaknesses of the existing system could be rectified by de-coupling the DPs from eligible animals and by using other methods with more suitable compliance criteria to distribute the DPs to farmers. As outlined by Dunne 1996f ,

> "*the current EU policies of trying to maintain and improve incomes of beef producers:*
>
> - *by increasing the revenue from direct payments*
> - *which are tied to a declining number of eligible animals*
> - *that are producing ever smaller carcasses*
> - *on an increasing land base*
> - *with static and declining beef prices*
> - *with limited scope for the costs to reflect the value of the beef carcass (market based revenue), was not sustainable in the long term.*"

An alternative outline proposal was suggested as follows:

> "*the existing pool of DPs, especially the Special Beef Premium (SBP) and extensification, could be more efficiently targeted at beef producers and decoupled from production to:*

- *encourage production methods that were more acceptable to the consumer*
- *minimise their capitalisation in external assets*
- *encourage the disengagement of farmers"*

An operational framework was outlined, as follows:

> *"The DPs could be administered as a* ***decoupled payment, using a whole farm concept*** *as is currently the situation for REPS. The size of the payment to the individual beef producer could be related to:*
> - *the current area devoted to the beef production process, but suitably modulated to take account of cost and income equity factors*
> - *the degree of traceability of the animals used in the production process, and*
> - *the degree of traceability of the other inputs used (fee, medicines etc), and*
> - *subject to the production process being operated to satisfactory environmental and animal welfare criteria."*

It was suggested that the following benefits would arise:

> *"such a system would result in a supply of beef that could be suitably differentiated, mainly by traceability and production process, and marketed as such at consumer level to achieve both better prices and increased consumption"*.

From an Irish perspective, this new concept was subsequently described as "… *using a schedule similar to the Farm Retirement Scheme (FRS) but with Rural Environment Protection Schemes (REPS) type requirements*", Dunne and O'Connell 2000c.

It was, of course, recognised that the future feasibility of implemeting this new policy concept in Ireland would be highly conditional on its acceptability both within the EU generally and its compatibility with the policies of other major trading blocks, especially the US. Since cereal policy was central to both the EU and US stance in relation to future WTO negotiations a comparative review of policy trends was undertaken. This showed that historical policies for farm income support mechanisms could be classified under three broad headings:

- product price support
- land area type payments, and
- individual farmer payment.

This review also showed that after 1995 the US policy had shifted to an exclusively "farmer" payment the value of which was based on the area payments secured at a specified date in the past. But, strangely there were no supply control or public service conditions attached to the receipt of this new payment and, for farmers with "no past" there was to be no payment.

Encouraged by these findings, the research effort then focussed generalising the original concept for decoupling by developing an overall policy template for a multi-commodity framework for the EU. Also identified were a range of "public goods" which could be incorporated into this framework to provide a much stronger conceptual basis for continuing the DPs into the future. The results[1], were presented in papers at international conferences, (EAAE and EAAP, Dunne and O'Connell 1998, 1999, 2000d) and at local farmer meetings and in non-peer review articles, Dunne 1997b,h, 1998c, Dunne *et al* 1999, and Dunne and O'Connell 2000a,b,c. All of which provided very encouraging feedback on the approach being developed and recommended.

On the basis of this research it was concluded that the proposed policy concept for the EU offered a number of well-defined advantages, the main ones being that it provided:

- a better justification for the direct payments themselves, through the provision of public goods rather than as compensation for historical price reductions
- an increased probability for their transfer between generations of farmers, since the duration of the farming process could be infinite
- an improved mechanism for reducing the capitalisation of the value of the DPs into farm assets and future farm costs, since the payment would be fully decoupled from the animal plus a weakened link with the land area farmed.

From a farmers perspective, it was concluded that if this or a similar EU policy framework was implemented, cattle farming would revert to a situation where:

- the market based margin of sales value less direct costs would determine the animal numbers, type, carcass weights, slaughter dates, stocking densities and the mix of internal and external feed used, and
- the expenditure on concentrates and fertilisers would decrease to reflect the decline in animal and crop prices, animal numbers and the changes in the farm enterprise mix.

Preliminary estimates for Ireland were made and, compared to 1999, the annual expenditure reductions on purchased feeds and fertilisers could be of the order of IR£150 and IR£50 million respectively, or €190 and €65 million. In volume terms, equivalent to about one million tonnes of concentrates and about 300,000 tonnes of fertilisers.

Furthermore, if such a support system was implemented throughout the EU, a similar reformulation of beef production methods would occur in other Member States and this within a few years would reduce beef supplies and restore market balance in the EU. The historical evidence available from this research study suggested that Ireland would have most to gain in terms of market access and beef prices from a much improved market balance within the EU.

However, it was recognised that fully rectifying the structural weaknesses of the existing EU animal-based DP system through decoupling would be tedious as such reforms are by their nature slow and difficult to achieve. Nevertheless, the direction of change was beginning to crystallise as outlined in the stated objectives in the EU Agenda 2000 proposals, but these were not carried through in the actual agreement itself in 1999.

[1] An almost identical method of decoupling was subsequently used by the EU in the shift to the Single Farm Payment (SFP) system implemented in 2005.

Nevertheless, the first tentative step of an EU policy shift in this direction was incorporated in the Agenda 2000 agreement (for implemention in 2001) with:

- the introduction of the principle of cross compliance for all the farm product-based DPs, and
- the de-coupling of the disadvantaged areas or "headage" payments from animals and their reformulation as an area type payment with public good compliance conditions.

However, some seven years elapsed before the initial decoupling concept using a whole farm system incorporating a multi-commodity approach for all of the CAP products was implemented by the EU with the introduction of the Single Farm Payment (SFP) in 2005[2]. This was the eventual outcome of the EU agreement following the Mid-Term Review of the Agenda 2000 reforms in 2003.

Although it was becoming increasingly obvious that decoupling of the animal-based DPs was inevitable, Irish cattle farmers had to function in the interim period within the existing policy arrangements. Consequently, a parallel research approach was undertaken to continue to enhance the operational efficiency from an Irish perspective of the existing EU policy while simultaneously developing a more suitable longer term system for the EU in general.

Following the BSE crisis in 1996, cattle prices in Ireland declined sharply indicating that the EU price support mechanism itself was seriously deficient in this respect. In addition beef markets within the EU quickly became renationalised rendering Irish exports extremely problematic. The initial EU response was to reintroduce the traditional system of intervention purchases, namely steer beef in Ireland, to support cattle prices and to propose a new system for the slaughter of lightweight animals (calves and weanlings) to curtail future beef supplies. The withdrawal of young animals would present a serious challenge for Ireland because of the increasing and relatively high income dependency of Irish cattle farmers on DPs.

Any significant reduction in the supply of these animals would intensify the capitalisation of the animal-based DPs into young animal prices, adding to leakage of the cost of calves from the dairy sector. This would increase beef production costs and therefore reduce further the market-based margins from cattle production *per se*. Furthermore, the removal of male calves would pose serious problems for the administration of the animal-based DPs which were already becoming the sole income for a large segment of cattle farmers, i.e. no "eligible animal" no DPs and probably no margin. In essence, the policy approach was becoming increasingly circular and self-defeating.

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[2] The SFP was almost identical to the decoupling proposal by Dunne 1996f, and outlined in greater detail in Dunne and O'Connell 1998, 1999, 2000a,b,c,d. The two main differences were: (a) the architecture of the SFP was entirely area-based whereas the original decoupling proposal used a combination of a farmer/household component and an area–based component to reduce the capitalisation of its value into land values and future costs, (b) the SFP introduced an additional compliance requirement in relation to farm safety.

The consumer response to BSE was essentially a product credence problem. Therefore, confining intervention purchases to steers was unlikely to address the credence issue as the BSE problem primarily related to older animals, and especially cull-cows from the dairy herd. It was therefore suggested that Ireland should recommend that for the immediate future EU intervention purchases should focus mainly on cull-cows and preferably remove such products from the food chain entirely as a consumer credence restoration measure. Such a switch could also result in a lower EU budgetary cost since there was no foreseeable commercial market for the beef being purchased into intervention. Moreover, cull-cow beef could be purchased at a lower cost per kilo removed compared to steers beef and this cost advantage would even be greater if the cows were purchased using a per caput payment administered through an auction type mechanism.

As an immediate measure to enhance the credence of Irish beef, especially in export markets, it was recommended that three-way market segmentation could be adopted. The market segments could be based on a combination of: the extent of the traceability of animals themselves, the input and production parameters used, and for beef derived from REPS farms. This type of Irish beef supply differentiation could be implemented almost immediately, pending the future development and implementation of an EU wide system for full traceability for beef.

In response to the above dilemmas, a number of aspects of the EU beef regime were examined in detail to identify alternative operating procedures and policy adjustments that would ensure that the EU beef market would, in the future, function as a single entity, namely, reverse the re-nationalisation.

A comparative analysis of trends over the previous decade in cattle and beef prices showed that Irish prices were generally at the bottom of the EU league, with occasional relative improvements in periods of short supplies. The main conclusion arising, was that Ireland would gain in relative terms from EU policies that would precipitate an overall deficit for beef within the Community, but would also be disproportionately penalised when surpluses arise.

An evaluation of the intervention regulations showed that its function was altered significantly over the years from being an automatic mechanism to achieve a defined producer price, to, at best, a very short term stabilisation of price at its market level. An analysis of the degree of achievement of institutional prices by R3 steer beef for a number of member states in the period 1989-1998 showed that Irish R3 steers achieved only 81% of the intervention price but in the same period French and UK producers on average received 89%. The 8 percentage point lower prices received by Irish producers for the same quality (R3 steer) was the equivalent to a difference of IR£75 per steer of 340 kg carcass weight, or approximately €95 per steer.

The EU labelling regulation was agreed in 1997 with compulsory implementation by 2000. This required labelling to be implemented at the point of sale containing information on issues such as: country of origin, animal type, method of production, date and location of slaughter. A review of the labelling regulations concluded that the concept of labelling beef by member state of origin was running counter to the idea of a unified market and contrary to the spirit of the European Union.

Whether identification of country of origin at consumer level is a good or bad strategy from Ireland's viewpoint depends on the degree to which Irish beef has an image or identity in markets in which it is sold and on whether this is positive or negative. It could be used for the creation and enhancement of a positive image for Irish beef by the industry and An Bord Bia. But it could also facilitate the development and expression of xenophobia at consumer level.

Additional labelling increases transparency but there are added costs involved in operating a system with complete traceability for all produce. The balance between benefits and cost are difficult to establish. Undoubtedly there are segments of the beef market that respond favourably to additional information, traceability and quality assurance. But, equally there are other segments of the market that are indifferent and consequently no benefits will arise despite the added costs incurred.

Over a period of years, the EU Commission was progressively favouring a shift from intervention support to Aids to Private Storage (APS), as a cost saving alternative. A research review of the historical price effects of APS showed that its impact depended very much on its predictability in time, its duration, the rate of the subsidy paid and the implementation rules. While not quantified, there was a strong probability that the APS system as operated in the 1980's increased the profitability for the Irish beef sector as a whole. This arose from the combination of:

- an increase in revenue due to better prices for the high proportion of the cattle slaughterings which occur in the autumn, and
- cost savings arising from relatively low production costs for cattle finished on grazed grass.

However, the operation of APS only in the autumn period raises strategic issues with regard to the type of beef producing country Ireland wishes to be. Given Ireland's unique export orientation for beef and geographic location, the primary options are:

- on maximising the production of commodity beef based on grazed grass with minimum cost and resulting in highly seasonal supplies, or
- on the development of a more up-market product which requires a-year round production at a higher cost.

An Inter-Country comparison of the value of EU guidance and guarantee DPs received by cattle producers in Ireland, UK, France and Germany found that Ireland has done well from the animal-based DPs. The value of the DPs received by Irish cattle farmers increased almost **four-fold** in the period 1993-1997, and by 1997 these were equivalent to 75 Irish pence per kg on all beef produced in Ireland, comparable to IR£255 (€320 approx) per 340 kg carcass. Thus while cattle farmers in Ireland may obtain the lowest beef prices in the EU, they also obtain the highest DPs per kilo of beef produced. And on a combined price and DP basis Ireland was usually ahead of the EU average and generally on a par or ahead of the French position.

An analysis of the margins for the cattle enterprise on the farms in the Teagasc, National Farm Survey (NFS) over the five year period 1993 to 1997 found that after the 1992 CAP reform, the animal-based DPs became a major source of revenue for cattle farmers in Ireland. By 1997 there was a very high and increasing reliance on the animal-based DPs for both margins and income.

In addition, the switch to DPs introduced a level of stability into the overall margins and incomes because the DPs themselves were predictable and the level of pay-out could be adjusted administratively from year to year. Furthermore, most cattle farmers obtained DPs directly, but some farmers, most notably dairy farmers and a proportion of cattle breeder-rearer's i.e. farmers with suckler-cows but who sell the weanlings before they collected the special beef premium (SBP), also obtained significant indirect benefits from the capitalistion of a portion of the values of the DPs into calf and young animal prices.

These findings reinforced the earlier observations that the management emphasis in Irish cattle production systems could increasingly move away from consumer requirements to the compliance criteria for the DPs due to the very high dependence by farmers on the DPs for their income. It also limits the capacity of producers to reduce costs, especially for farmers who are exclusively involved in the fattening stages of production.

This farm level research provided very strong evidence that administering DPs through the system of eligible animals within defined stocking densities is essentially a "flat area aid" mechanism. Effectively, the total value of DPs per hectare of utilisable agricultural area was almost constant across farm sizes, but the composition of the DPs (premium type) obtained by the various size categories reflected the types of eligible animals on the farms of different sizes. Thus leading to the general conclusion that the individual animal-based DPs were a circuitous and poorly targeted income support system and it was achieved at high cost in terms of: product quality, increased cattle trading and general administration. Furthermore, the additional switch to animal-based DPs planned in Agenda 2000 could but only increase these problems.

In summary, the main reason why Irish cattle farmers gained under the 1992 and the later Agenda 2000 reforms were that Ireland gets above the EU average benefit from DPs, but below average return from price support. The above average benefits from animal-based DPs arises from the combined effect and a synergy between the suitability of the structure of the DPs themselves and the extensive nature of the production systems used by Irish cattle farmers. Therefore, for the future, the greater the degree of switch-over of income support from product prices to the animal-based DPs the larger the income gain for Irish cattle farmers.

Nevertheless, these investigations provided substantial evidence of a number of major structural weaknesses in the existing animal-based DP system. These arose from the inequitable distribution of the payments themselves and the leakage of much of their value into input costs. The overall weaknesses of the system were summarised as follows:

- the administrative complexities of the payment system itself
- the poor targeting of the payments
- the related knock-on effects of the payment system in relation to:
    - beef production costs, arising from the leakage of DP revenue due to the capitalisation of a portion of the value of the DPs into external assets i.e. calf costs and land rental charges, and
    - the lack of reward for good animal husbandry practices and for producing quality beef
- the absence of any clear benefit to either society and/or the taxpayer from a rather large expenditure.

The overall conclusion was that the animal-based DP system of income support, administered through eligible animals, suffered from both poor targeting and inefficient delivery.

The analysis of the margins achieved by Irish cattle farmers showed that over the years as the switch-over to DPs progressed, cattle production *per se* became uneconomic. But, Irish cattle farmers needed the cattle and had to remain in cattle farming to access to the DPs which were in fact the only income.

The nature and structure of both the 1992 and Agenda 2000 CAP reforms were such that cattle farmers and farming methods generally were becoming severely constrained by what was subsequently described as "*a mixture of administrative, economic and bureaucratic asphyxiation*", Dunne 2000a. And, with cattle farming being so pervasive in Ireland, this affected most farmers and the other farm enterprises where they must co-exist.

In both the 1992 and the Agenda 2000 reforms, income compensation for historical product price reductions was used to justify the introduction and continuation of the animal-based DPs. The research findings from this study indicate that this constituted a very weak basis to justify a rather large taxpayer's expenditure for either their continuation into the future or their extension to new entrants into farming.

These findings plus the other results from comparative cattle prices and the implications of the earlier changes in intervention arrangements, APS and the labelling regulations were used in the formulation of the recommendations which were made available to farmers and policy makers prior to and during the negotiations on the Agenda 2000 proposals.

Overall, the project concluded that the decoupling of the animal-based payments would be the inevitable solution. However, a limited interim solution to some of the administrative, economic and bureaucratic asphyxiation problems of cattle farming in Ireland could be implemented immediately if Irish policymakers were to take advantage of the single payment extensification option available under the Agenda 2000 agreement. Then, eligible animals on farms stocked at 1.4 LU/ha or lower would receive an extensification premium of IR£79 (€100) each. But, all other farmers and their related land area, steers, heifers, cows and cereal area could be farmed outside the stocking density constraints of the extensification system. Yet, the national revenue take from extensification would be maximised. This latter observation was verified subsequently by the actual number of extesification premiums claimed by Irish farmers.

1. Introduction

Ireland has had a very high historic dependence on exports of beef and cattle to both the internal EU and third country markets. Therefore, beef prices and the incomes of cattle farmers in Ireland have been highly sensitive to changes in EU beef policy and beef market imbalances.

The inherent nature of cattle farming with its long and rather flexible production cycle makes it difficult to control and predict beef supplies and prices. These inherent characteristics are further complicated in Ireland by the strong influence by EU beef policy in relation to income support, production methods used and export trading conditions.

Even with the reform of the CAP in 1992, beef supplies in the EU were expected to exceed demand and exports to third countries were constrained by international commitments under the WTO (GATT) agreement of 1994. Various food safety issues, in particular the BSE crises in 1996 and 2000, further accentuated the market imbalance in the EU.

Following the 1996 BSE crisis:

- beef consumption in the EU declined sharply
- the market in the individual member states were re-nationalised, and
- exports to third countries became very difficult.

These market difficulties were exacerbated by the international financial problems throughout the 1990's and especially in Russia in 1998 and 1999. The overall impact was that Irish cattle and beef exports to traditional and evolving markets in third countries were severely compromised and cattle prices in Ireland declined sharply.

The primary objective of this project was to develop and evaluate alternative EU policies that would be more suitable for Irish cattle farmers than the 1992 reform of the CAP. To address the negative aspects of the 1992 reform and the subsequent problems arising from the BSE crisis, Teagasc, in conjunction with a research partner at University College Dublin, initiated research to establish how Ireland could:

- develop a more strategic approach to the evolution of a single EU beef market and EU policy as it affected Irish cattle production, and simultaneously
- develop a policy template with a more suitable system of income support for EU agriculture and yet be compatible with GATT/WTO commitments.

2. Approach and Methods

Following CAP reform in 1992, a suite of research projects were developed and undertaken to evaluate its impact. The original plan was to develop this project as a logical sequel to three other Teagasc projects. These were:

- the impact of feed resource costs on the relative competitiveness of beef with other meats (see End of Project Report by Dunne *et al*, project No. 4018)
- the economics of cattle production systems in Ireland post CAP reform, (see End of Project Report by Dunne *et al*, project No. 4017)
- Inter-country cost comparisons in beef (see End of Project Report No. 4314 by Dunne *et al*).

The expectation was that these three studies would identify and quantify the optimum cattle production systems in Ireland, export competitiveness of Irish beef, and the strengths and weakness of Irish cattle production systems. This information would then be used to develop and evaluate alternative EU policies that would be more suitable for Irish cattle farmers and beef exports, which would form the original basis of this project.

The initial work on the project was aimed at identifying and quantifying how the phased implementation of the 1992 CAP reform for beef and cereals would impact on Irish cattle and feed prices respectively (see End of Project Report No. 4018 by Dunne *et al)*. This information was a vital input into the other two projects: the economics of cattle production (see End of Project Report No. 4017 by Dunne *et al*) and the inter-country cost comparisons in beef (see End of Project Report No. 4314 by Dunne *et al*).

However, the initial phase of the research plan was severely disrupted and complicated by international developments in currency exchange rates and within the EU by the functioning of the related agri-monetary mechanism. The added uncertainty arising in Ireland from the currency changes precipitated an urgent need for information and explanations on the causes and implications of such changes.

It was therefore necessary to undertake research in these topics in order to explain how the phased implementation of the 1992 CAP reform in Ireland appeared to be yielding unexpected outcomes on cattle prices and feed costs and the value of direct payments. A number of conference papers and non-peer review articles were prepared and published to service the unexpected and expanding requirements of both Teagasc staff and the wider needs of farming and agribusiness (see End of Project Report No. 4018 by Dunne *et al*).

Following the BSE crisis in 1996, the demand for beef collapsed, a severe market imbalance developed within the EU and internal markets became renationalised. This in turn precipitated an urgent "crisis type" requirement for EU policy adjustments aimed primarily at reducing beef supplies. Due to the scale and urgency of the problem, this aspect of the current project had to be undertaken well ahead of schedule and without the benefits of the previously planned results form the related projects (project No. 4017, 4018 and 4314).

In the absence of the relevant information from the other projects a new approach had to be adopted. Following consultations with colleagues, policy experts, cattle farmers and the various economic participants in the beef industry it was decided to adopt the twin strategy of:

- devising a more suitable long term EU policy in relation to the format and function of the DP system, while simultaneously
- devising a more strategic approach to the evolution of a **single EU beef market** through better functioning of the existing CAP system.

The approach used in relation to the future administration of the DPs was to develop a generalised policy concept for all farm based payments for application throughout the EU which could:

- include commodities other than beef, and
- increase the acceptability of such a system to other EU member States and in an international trade (WTO) context.

For this purpose, an extensive review and critique was undertaken of the historical evolution of farm income support systems in both the US and EU. This provided a basis for devising the structure, architecture and purpose of an alternative EU template. The resulting draft template using "multi-commodity framework" was presented at international and domestic conferences and seminars to obtain feedback to facilitate further refinement of the concept.

To achieve the interim objective of a better functioning of the EU "single" beef market under the existing CAP system, an in-depth evaluation of the entire structure of the contemporary EU policy was undertaken. During the lifespan of the project five working papers were prepared and published on various aspects of EU policy for beef. The topics addressed were:

- Inter-country comparisons of cattle prices
- An evaluation of the intervention system and the labelling regulations
- An evaluation of the operation of Aids to Private Storage
- Inter-country comparisons for Direct Payments and Total Revenue for beef
- Direct payments and cattle margins in Ireland.

The draft working papers were circulated to a number of experts for critique and comment. Following any necessary revisions, the actual working papers were then published to facilitate further public discussion on these very important topics. The authors consistently invited comments and observations on their analysis and conclusions. In addition a number of conference papers and numerous non peer review articles were prepared to encourage public discussion of the issues involved.

All of the research results, plus a series of recommendations were made available at the beef consultative group meetings on Agenda 2000 that was established by the Minister for Agriculture, (via Dr. W. Dunne as a Teagasc representative). Presentations on the impact of the Agenda 2000 proposals and on the alternative policy options were also made at meetings and seminars for farmers and agri-business groups and policymakers.

3. Results

The beef sector in Ireland was in a continuous state of flux for most of the final decade of the last millennium. It was constantly responding to three major factors throughout the lifetime of this project. These were:

- adjusting to the 1992 reform of the CAP for beef and cereals and the constraints of the GATT/WTO agreement
- adjusting to the 1996 BSE crisis and the resulting collapse in beef consumption and cattle prices together with the re-nationalisation of markets within the EU
- identifying and preparing policy responses to ameliorate the fall-out from the BSE crisis, and
- preparing for further CAP reform (Agenda 2000 and WTO).

The uncertainties arising precipitated strong and continuous demands for information, explanations and remedies from the farming and agribusiness interests. The research program itself and the preparation of publications had to be regularly readjusted to meet the urgent needs and responses to rapidly evolving circumstances.

Over the life span of the project, a series of conference papers, non-peer review articles and reports were prepared and published on a wide range of relevant topics (see list at the end of this report). The main research findings are summarised in this report under a number of headings which are presented chronologically to contextualise the results within the rapidly evolving policy situation in which they actually arose. The main section headings are:

CAP reform (section 3.1)
Policy review (section 3.2)
Policy structure (section 3.3)
Policy development (section 3.4)
Developing a single EU beef market (section 3.5)
Agenda 2000 (section 3.6).

3.1 CAP reform

The 1992 reform of the CAP was implemented on a phased basis over the period 1993 to 1995. Even during this transition phase, the impact of CAP reform in Ireland was significantly affected by changes in two major external factors. These were:

- changes in currency exchange rates and related agri-monetary developments
- shifts in the market balance in the EU.

Because of shifts in exchange rates and the resulting agri-monetary adjustments the anticipated reductions in beef and cereal prices and the cost of concentrate feed were greatly blunted in Ireland (see End of Project Report No. 4018 by Dunne *et al*).

For summary purpose for this report, the main consequences of the agri-monetary adjustments (almost exclusively devaluations) were:

- a virtually immediate increase in the price of beef, grain and concentrate feeds

- an increase in the value of direct payments (DPs) but with a time lag of up to one year
- a cumulative increase in the cost of forage production due to cost increases with various time lags for oil, fertilisers and farm machinery, the costs of which were determined after a time lag by actual rather than the agri-monetary exchange rates.

Before CAP reform was fully implemented in 1996, the scale of these agri-monetary induced changes in Ireland was such that:

- almost half the anticipated reduction in the support prices in IR£ for beef and cereals were negated, and
- the value of the direct payments in IR£ had increased by over 13 percent.

Furthermore, the general expectation at the time of the 1992 CAP reform was that for the foreseeable future surpluses would continue to be a feature of the EU beef and cereals markets. For various reasons (mainly weather related), and against expectations, these surpluses were suddenly dissipated in the mid-nineties in advance of the implementation of the GATT/WTO agreement. This resulted in the prices of beef and cereals remaining high despite the reduction in institutional support prices. (For further details see various reports listed in references, especially Dunne *et al* 1994 on the consequences of GATT, and related reports on market balance).

In Ireland, the combined consequences of the changes in the EU market balance and the agri-monetary adjustments were that the prices for beef, cereal and concentrate feed remained almost static until 1995. This outcome was totally against the expectations at the inception of the CAP reform and as a result cattle farmers in Ireland enjoyed a "windfall gain" with greatly increased revenue from animal-based Direct Payments (DPs) without incurring the corresponding reduction in beef prices. In fact it was not until the BSE crisis in 1996, when the full impact of the reduction in the institutional support arrangements, such as the operational aspects of the intervention system, began to impact on cattle prices and feed costs in Ireland.

3.2 Policy review

Following the BSE crisis in March 1996, the demand for beef collapsed and Irish cattle prices declined sharply. In response to this situation an urgent review was undertaken of economic and technical performance of the Irish cattle sector and the related EU policy. The main results of this review were published in a paper presented at the annual Teagasc, Agri-Food economic conference in December 1996 and in a number of popular articles, Dunne 1996f, and early 1997 (for further details see list in bibliography).

The initial policy review work concentrated on issues related to beef prices, direct payments and eligibility criteria for the DPs . This research was also an input requirement for two parallel projects on the economics of cattle production and inter-country competitiveness, (see End of Project Reports No. 4017 and No. 4314 by Dunne *et al*, in 2001).

The main findings with regard to prices (summarised in Dunne 1996d) were that:

- beef prices would have to be reduced further if beef is to remain competitive with other meats in consumer markets, and
- methods other than high producer price support would have to be developed to economically sustain cattle production in Ireland and the EU generally.

The large-scale switch to the animal-based DP system of income support had two main consequences for the competitiveness of Irish cattle production. These were:

- the very strong ability of Irish farmers to access the DPs as a source of revenue, and
- the cost implications, particularly for calf prices.

Comparative results with other member states, presented at the Agricultural Research Forum in 1997, showed that the ability of Irish farmers to “draw down” the various DPs was very good. This arose from the synergistic effect of:

- the suitability of the structure of the DPs themselves, and
- the extensive nature of the beef production systems used in Ireland.

Two distinct methods were used to evaluate the evolving relationship over time between calf prices and the large-scale switch to DPs. An inter-country comparison of calf prices found that once the animal-based DPs were introduced, the price of male Friesian calves in Ireland increased relative to those in other member states. As anticipated, the greatest increase in the price differential was in relation to calf prices in the Netherlands where such calves are mainly used for veal and therefore were then[3] not eligible for any animal based DPs.

Secondly, when trends in the price of calves and the value of a finished carcass in Ireland were compared, this showed that calf costs were accounting for an increasing proportion of the value of the carcass post CAP reform. The ratio appeared to have reached a plateau about the time that the phased implementation of the DPs was complete in 1995-1996. This implies that there was a reversal of the traditional relationship between calf costs and finished cattle prices. Added to this would be the indirect impact of the bidding in process on the prices of heifer calves.

From this research it was concluded that by 1995, about IR£35 to IR£40 of the value of the then animal-based DPs were being “bid into the calf cost (price)” of the male Friesian calf in Ireland. This would be the equivalent to an <u>annual</u> direct transfer of income of about IR£25 million (over €30 million) of value of cattle DPs to the owners of dairy cows. As subsequent research showed, this “bidding in” process or rent seeking aspect of the future value of DPs was cumulative along the cattle production chain until the animal has secured its final DP sometimes at slaughtering.

This capitalisation process was only of academic interest if the animal was fattened on the farm on which it is bred. However, when the calf or young animal was traded

[3] A slaughter premium was subsequently introduced, post the BSE crisis

between farms, as is common practice in Ireland, the capitalised value is released to the seller and becomes a cost (rent) to the buyer for the next stage of the production chain. This process would progressively increase as the animal moves towards the farms involved in the final stage in the production chain. A subsequent analysis of the trends in the margins for the different type's cattle enterprises on farms in the Teagasc, National Farm Survey (NFS) provided additional evidence to support this view, (Dunne and Shanahan 1999a, b).

The conclusion from this research was that the capitalisation process had widespread implications[4] in relation to cattle farming. The main ones were that:

- much of the rent seeking benefits of the inflated calf prices were accruing to the dairy enterprise and/or dairy farms which supplied over half of the calves but the extra costs were internal to the beef enterprise

- cattle finishers were obtaining most of their margin from DPs rather than the market. Therefore they were likely to be more responsive to the compliance criteria (a combination of "eligible" animals and stocking densities) for the DPs rather than to the requirements of the beef market and consumers

- there was poor targeting of income support. The farmers who actually collected the individual DPs were not necessarily those who were the main beneficiaries of most of their full value.

The overall conclusion was that the DP system of income support administered through eligible animals suffered from both poor targeting and inefficient delivery[5]. The inefficiencies for delivery arise from high direct and indirect costs. The major issues were the high operational costs at farm level arising from the complexity of the compliance criteria and the capitalisation of much of the value of the DPs into external assets.

3.3 Policy structure

The implications of these findings became particularly acute following the serious market imbalance accruing as a result of BSE in 1996. In response, a more fundamental review of the entire EU policy for beef was initiated. This review concluded the poor margins and incomes derived from cattle farming in Ireland were not the result of poor technical performance or the inability of cattle producers to adjust to external signals. The income problems were largely a reflection of the EU policy for milk and beef and the inadequate scale of operations for most of the beef enterprise in Ireland, (Dunne 1996f and Dunne *et al* 1997a, b).

[4] Some of the longer term consequences of this animal-based DP income support system for cattle breeds and production systems were discussed in more detail in an article on the factors driving calf prices, Dunne 1998a

[5] Apart from the capitalisation issue, transaction costs were high, these include non-cash costs associated with the operation of the DP scheme in terms of information gathering, negotiation, agreement, and compliance criteria

The overall conclusion, as summarized by Dunne 1996f, was that:

> *"the current EU policies of trying to maintain and improve incomes of beef producers:*
> - *by increasing the revenue from direct payments*
> - *which are tied to a declining number of eligible animals*
> - *that are producing ever smaller carcasses*
> - *on an increasing land base*
> - *with static and declining beef prices*
> - *with limited scope for the costs to reflect the value of the beef carcass (market based revenue), was not sustainable in the long term."*

A proposal for an alternative system of income support for beef producers' was outlined, (Dunne 1996f) as follows:

> *"the existing pool of DPs, especially the Special Beef Premium (SBP) and extensification, could be more efficiently targeted at beef producers and decoupled from production to:*
> - *encourage production methods that were more acceptable to the consumer*
> - *minimise their capitalisation in external assets*
> - *encourage the disengagement of farmers"*

This paper also outlined an operational framework, as follows:

> *"The DPs could be administered as a* ***decoupled payment, using a whole farm concept*** *as is currently the situation for REPS. The size of the payment to the individual beef producer could be related to:*
> - *the current area devoted to the beef production process, but suitably modulated to take account of cost and income equity factors*
> - *the degree of traceability of the animals used in the production process, and*
> - *the degree of traceability of the other inputs used (feed drugs etc), and*
> - *subject to the production process being operated to satisfactory environmental and animal welfare criteria."*

In addition, the following benefits were identified:

> *"such a system would result in a supply of beef that could be suitably differentiated, mainly by traceability and production process, and marketed as such at consumer level to achieve both better prices and increased consumption"*.

Following the initial public reaction and subsequent feedback, further research effort was undertaken towards refining the operational framework proposed above. Two parallel strategies were adopted. These were:

- developing a generalised policy concept for all farm commodity (enterprise) based payments for future application within the EU which could:
  - include commodities other than beef, in parallel with an
  - increase the acceptability of such a system within the EU and in an international trade (WTO) context

- while simultaneously developing more interim policy strategies that would allow and restore the EU beef market to function and operate as a single entity.

This twin methodology approach provided the options for devising a more suitable long term EU policy while simultaneously contributing to the better functioning of the existing CAP system for beef. The main findings arising from this research are summarised in sections 3.4 and 3.5 respectively.

3.4 Policy development

When this policy development phase was initiated it was perhaps somewhat optimistically anticipated that for beef at least this type of approach would be required before the end of the millennium. As events unfolded, much of the information accumulated also provided valuable insights and recommendations for responding to the Agenda 2000 proposals published in late 1997 and in the autumn of 1998 (see section 3.6).

The approach adopted was to review developments in cereal policy as these were considered central to both the EU and US stance in relation to future WTO negotiations. The outcome of this review was that historical farm income support mechanisms could be classified under three broad headings:

- product price support
- land area type payments, and
- individual farmer payment.

For example, the US policy for cereals, prior to 1995, was based on a combination of product price support and deficiency type payments. The payments were administered on an area basis using a notional crop yield conversion coefficient. Eligibility for the payment depended on compliance with specified crop mix and set-aside conditions. Post 1995, the policy shifted to an exclusively “farmer” payment, the value of which was based on the area payments secured at a specified date in the past. Strangely, there were no production conditions attached to the receipt of this new payment and therefore there were no requirements to deliver any public service, not even a supply control dimension, in return. And, for farmers with “no past” there was to be no current or future payment.

On the basis of this review of trends in US cereal policy it was concluded that the proposed policy concept for the EU, as outlined in section 3.3 above, offered a number of distinct advantages in relation to international trade negotiations. The main ones were that it provided:

- a better justification for the direct payments themselves, namely through the provision of public goods rather than compensation for historical price reductions
- an increased probability for their transfer between generations of farmers, since the duration of the farming process could be infinite

- an improved mechanism for reducing the capitalisation of the value of the DPs into farm assets and future farm costs, since the payment would be fully decoupled from the animal plus a weakened link with the land area farmed.

Furthermore, using the concept of rewarding farmers for the production process, the payments could be justified as remuneration for “public services” supplied by farmers such as good farming practices, supply control and stable prices. This contrasted sharply with the then existing situation in the EU where the payment was justified as a compensation for adjusting to historical reductions in commodity support prices.

In the proposed system, inter-generation transfer of payment rights would be enhanced because “good farming practices” go on indefinitely, while the US system with “personalised” payments had a historical basis and had no obvious method of transfer to new entrants.

As demonstrated earlier in section 3.2 above, when a payment is tied to an asset, such as a specific animal or hectare of land, part of the value of the payment will get capitalised into asset values and related (rent seeking) costs for new entrants. For the future policy, therefore, the weaker the link between the payment and the farming assets the lower the degree of capitalisation, and by implication, even more important, the lower the added (rent) cost for new entrants. Consequently, strengthening the link between the payments and “public good” type of activities would seem appropriate in this respect.

Encouraged by these findings, the research effort then focused on generalising this approach to develop an overall policy template for a multi-commodity framework for the EU. The research results for this “multi-commodity framework were first presented at a European Agricultural Economics conference in Paris, (Dunne and O’Connell, 1998). This generalised policy framework, with further economic justification for the refocusing of the direct payments, formed the basis of a paper presented at the European Association of Animal Production (EAAP) conference in Switzerland (Dunne and O’Connell, 1999 and 2000d).

In addition, the main findings were published in a number of non-peer review articles and conference papers in Ireland over the period 1997 to 1999. The international and local feedback was very encouraging, with Irish cattle farmers[6] in particular favouring this type of operational approach to farm policy.

These publications elaborated in some detail on how “public goods” could be readily incorporated into an overall template for a multi-commodity framework for EU direct payments. This could be achieved at operational level by using a “whole farm” concept for a mix of commodities (farm enterprises) and by a combination of personal or

[6] However, almost all of the farm organisations in Ireland, and most agri-business representative bodies were reluctant to fully embrace the concept due to concerns in relation to (a) a probable re-distribution within farming of the benefits and cost associated with the animal-based DPs, and (b) cost and revenue implications for farm organisations and agribusiness arising from anticipated future reductions in the volumes of both farm inputs used and outputs produced with their knock-on impacts on turnover and margins.

household and area payments. Furthermore, the economic justification for DPs in the future would be greatly enhanced once provision of public goods was directly incorporated as part of the compliance conditions for the payments.

The first tentative EU policy shift in this direction eventually occurred in the Agenda 2000 agreement (implemented in 2001) with:

- the introduction of the principle of cross compliance for all the DPs, and
- the de-coupling of the disadvantage areas or “headage” payments from animals and their reformulation as an area-type payment with public good compliance conditions.

However, it was some seven years after the initial proposal (by Dunne 1996f), before the EU adopted a whole farm system using a multi-commodity approach for all of the CAP products, and culminating in the introduction of the Single Farm Payment (SFP) in 2005[7].

3.5 Developing a single EU beef market

Following the 1996 BSE crisis:

- beef consumption in the EU collapsed almost immediately,
- the market in the individual member states became **re-nationalised**,
- exports to third countries became extremely difficult, and
- cattle prices declined sharply, especially in Ireland.

The reductions in cattle prices were particularly severe in Ireland due to the very high dependency on exports. These market difficulties were also repeated following the international financial problems in 1998 and 1999, especially in Russia. Again, following the second BSE crisis in late 2000 a similar situation developed.

These and past experiences suggest that Irish cattle and beef exports to traditional and evolving markets in both the EU and third countries become severely compromised once excess beef supplies appear unexpectedly. As a consequence of the BSE crisis, cattle prices in Ireland declined sharply thus indicating that the EU price support mechanism itself was seriously deficient in this respect.

Following the collapse in demand as a result of the BSE crisis, supply control was an urgent and integral component of the stabilisation of the EU beef market. The initial EU response was to reintroduce the traditional system of intervention purchases to support immediate cattle prices for farmers and to propose a new system for the slaughter of lightweight animals (calves and weanlings) to curtail supplies in the near future.

[7] The structure of the SFP was almost identical to that outlined earlier by Dunne and O’Connell 1998. The two main exceptions were: (a) the architecture of the SFP was entirely area-based whereas the original proposal used a combination of a farmer/household component and an area–based component to reduce the capitalisation of its value into land values and future costs, (b) the SFP introduced an additional compliance requirement in relation to farm safety.

However, such controls had to be administered within the context of the 1992 CAP reform which was increasingly relying on DPs to sustain farm incomes. This presented an exceptionally serious challenge for Ireland where cattle farmer's incomes were becoming particularly dependent on the revenue from the DPs *per se*. Therefore the potential removal of calves and young animals posed serious immediate problems for the administration of the DPs and for future beef production (calf) costs in Ireland.

Furthermore, the very essence of the market instability arising from the BSE crisis was essentially a consumer credence problem and this was only marginally addressed in the Commissions proposals as it concentrated almost exclusively on methods to reduce supplies.

An analysis of the Commissions proposals concluded[8] that *"the slaughtering of calves and weanlings is not the best long-term option for the Irish beef industry"*. Among the reasons behind this conclusion were, the unique economic dependence of the Irish economy and Irish farming on the beef industry. For the wider economy the removal of calves presented a series of future problems for both on and off-farm employment, reduced purchases of farm inputs, plus reductions in added value on-farms together with the processing and exports of these farm outputs.

For most Irish cattle farmers, the slaughter of young animals could remove a significant portion of their main input (calves, mainly originating in the dairy herd) and most of their livelihoods. The removal of any fraction of the young animal herd was highly likely to increase the price of their remaining cohorts, and the larger the segment removed the greater the price effect. The resulting higher prices for calves and young animals would benefit the economic returns for their breeders, mainly dairy farmers and to a lesser extent suckler cow farms. However they become an added cost for farmers involved in cattle fattening which by now were increasingly being immersed in a classic price-cost squeeze over which they had no control.

In addition, reducing the supply of young animals would have knock-on implications which would further strengthen the capitalisation of the value of the animal-based DPs into young animal prices and thereby further reducing the margins available for cattle finishers. These direct and indirect increases in young animal prices (calf costs) for most of the cattle farmers, would in-turn shrink the already poor margin from cattle production *per se*.

Apart from the beef production cost implications, any large scale removal of calves *per se* would also remove the farmer's possibilities for collecting the series of animal-based DPs, i.e. no "eligible animal" no DPs. Since increasing the unit value of the animal-based DPs was already becoming established as the main policy instrument for maintaining or increasing the incomes of cattle farmers, there would be little merit in increasing the value of the individual animal-based DPs which were then administered through a shrinking pool of eligible animals. In essence, the policy approach was becoming

[8] "*Official report attacks weanling slaughter*", leading article by Des Maguire in Irish Farmers' Journal, volume 8, No. 36, September 7, 1996

increasingly circular and self-defeating. This further supports the earlier conclusion that the development of alternative administrative methods and/or decoupling of the animal-based DPs might be the ultimate solution, (see sections 3.2, 3.3 and 3.4 above).

While the removal of immediate and near future supplies would help to restore the market balance for cattle and producer prices, it would have little impact on repairing the consumer's credence in beef *per se*. In Ireland, intervention purchases continued to be confined to certain grades of steer beef, but the BSE based beef credence problem related primarily to older animals, especially cull dairy cows. To address this, it was suggested that Ireland should recommend that the EU should switch the main focus of their intervention purchases to cull-cows rather than steers as there would be a number of advantages arising from such a switch.

Firstly, the beef from cull-cows could then be removed almost immediately from the supply chain and preferably excluded from the food chain completely and thereby help to restore consumer confidence in beef. Secondly, the beef market outlook both within and outside the EU was such that there was likely to be no commercial market for the foreseeable future for the product being purchased into intervention, almost irrespective of its "quality". Thirdly, a substantial budgetary savings could be achieved because the ex-farm market price per kilo for cull-cow beef, and therefore the intervention buying-in price, would be significantly lower than that for steers.

Furthermore, if the primary objective was to withdraw beef entirely from the food chain, then it would be more realistic to use a per caput payment for the purchase of the cull-cows. Such a method would discourage farmers from incurring extra feed costs to add more liveweight and/or "finish" the cull-cows and increase slaughter weights of carcasses which were eventually only destined for exclusion from the food chain. Therefore, the potential tonnes of beef removed from the food chain would in fact exceed the actual tonnes that the EU would have to pay to remove and possibly dispose of outside the food chain.

Moreover, if the per caput payment was administered through a periodic auction system it would favour the withdrawal of very poor quality and older cull-cows. These were more likely to be those with a higher incidence of BSE, and be perceived as such by consumers, further enhancing the credence of the beef that remained within the food chain. Through regular and periodic adjustment of the per caput auction buying-in price, the scale of the supply withdrawal could be easily synchronised to reflect market balance requirements.

To enhance the credence of Irish beef, especially in export markets, it was also recommended Ireland should adopt a three way market segmentation approach based on a combination of the extent of the traceability of: the slaughter animals themselves, the inputs and production parameters used, and for beef derived from REPS farms, (Dunne and O'Connell 1996). This type of Irish beef supply segmentation approach could be implemented almost immediately, pending the future development and implementation of an EU wide system for full traceability for beef.

Against this turbulent EU beef market situation and the related income predicament for Irish cattle farmers, a number of aspects of the EU beef regime were evaluated in detail. The overall aim was to identify improved alternative operating procedures and policies that would ensure that the EU beef market would, in the future, function as a single entity, namely, reverse the re-nationalisation. This research was run in parallel with the policy development research outlined above (section 3.4).

The strengths and weaknesses of the existing EU beef regime were identified and summarised in a series of working papers prepared and published to encourage public discussion and feedback. The topics addressed in the five working papers published during the lifespan of this project[9] were:

- 3.5.1 cattle and beef prices in the EU (working paper No.1)
- 3.5.2 an evaluation of changes in the EU intervention system and labelling regulations together with their implications for Irish cattle prices (working paper No. 2)
- 3.5.3 aids to private storage – an evaluation (working paper No. 3)
- 3.5.4 inter-country comparisons of direct payments and total revenue for beef (working paper No. 4)
- 3.5.5 direct payments and cattle margins in Ireland (working paper No. 5)

The main findings of this research are summarised in the following sections.

3.5.1 Cattle and beef prices

Trends in cattle and beef prices for the period 1985 through 1997 for Ireland, UK, France, Germany and the EU average were analysed (working paper No.1, O'Connell *et al* 1999a). Three different price series were evaluated. These were:

- reference prices for cattle
- steer and bull beef prices
- cow beef prices.

This research on cattle and beef prices showed that Irish prices were generally at the bottom of the EU league, with occasional improvements in periods of short supplies. Therefore, from a policy perspective, Ireland would gain in relative terms from EU policies that would result in an overall deficit for beef within the Community, but would be excessively penalised when surpluses arise. These strategic results were used in the formulation of a series of recommendations in relation to the Agenda 2000 proposals, (see Chart 1 section 3.6.5).

3.5.2 Intervention system and labelling regulations

The intervention and labelling systems for beef in the EU has undergone major changes since inception (working paper No. 2, O'Connell *et al* 1999b). These significantly altered the function of intervention:

- from being an automatic mechanism to achieve a defined producer price
- to, at best, a very short term stabilisation of price at its current market level.

[9] Further working papers in this series were prepared on the extensification payment system, the findings of this research will be reported under project No. 4831.

For example, changes were introduced in 1987 and 1989 that resulted in a major dilution of the effectiveness of the intervention system in supporting producer prices. In these changes, the link between buying-in price and an institutionally set intervention price was finally broken. An analysis of the degree of achievement of institutional prices by R3 steer beef for a number of countries in the period 1989-1998 showed that Irish R3 steers achieved only 81% of the intervention price but in the same period French and UK producers on average received 89%. The 8 percentage point lower prices received by Irish producers for the same quality (R3 steer) is the equivalent to a difference of IR£75 (approx. €95) per steer of 340 kg carcass weight.

The EU labelling regulation was agreed in 1997 with compulsory implementation by 2000. This required labelling to be implemented at the point of sale containing information on issues such as: country of origin, animal type, method of production, date and location of slaughter.

The review of the labelling regulations (working paper No. 2, O'Connell *et al* 1999b) concluded that the concept of labelling beef by member state of origin is running counter to the concept of a unified market and is contrary to the spirit of the European Union. Whether identification of country of origin at consumer level is a good or bad approach from Ireland's stance depends on the degree to which Irish beef has an image or identity in markets in which it is sold and on whether this is positive or negative.

Labelling could be used for the creation and enhancement of a positive image for Irish beef by the industry and Bord Bia. But it could also facilitate the development and expression of xenophobia at consumer level. Additional labelling will increase transparency but there are added costs involved in operating a system with complete traceability for all produce. The balance between benefits and cost are difficult to establish. Undoubtedly there are segments of the beef market that respond favourably to additional information, traceability and quality assurance. But, equally there are other segments of the market that are indifferent and consequently no benefits will arise despite the added costs incurred.

These results were used in the formulation of the recommendations in relation to the Agenda 2000 proposals, (see summary in Chart 1, section 3.6.5 below).

3.5.3 Aids to private storage

The "Santer" proposals for Agenda 2000, published in July 1997, suggested the abolition of intervention purchases and its replacement with a system of Aids to Private Storage (APS). However, the proposals did not specify the operational details for APS. Under an APS system the EU does not take ownership for the product itself. Rather it subsidises the storage and leaves ownership in the hands of beef processors and agents in the beef industry.

The research found that the effects of a switch to APS depended very much on its predictability in time, its duration, the rate of the subsidy paid and the implementation rules (working paper No. 3, O'Connell *et al* 1999c). While not quantified, there was a strong probability that the APS system as operated in the 1980's increased the profitability for the Irish beef sector as a whole. This arose from the combination of:

- an increase in revenue due to better prices for the high proportion of the cattle slaughterings which occur in the autumn, and
- cost savings arising from relatively low production costs for cattle finished on grazed grass.

However, the operation of APS only in the autumn period raises strategic issues with regard to the type of beef producing country Ireland wishes to be. Given Ireland's unique export orientation for beef and geographic location, the primary options are:

- on maximising the production of commodity beef based on grazed grass with minimum cost and resulting in highly seasonal supplies, or
- on the development of a more up-market product which requires a-year round production at a higher cost.

3.5.4 Direct payments and total revenue for beef

An inter-country comparison of the EU guidance and guarantee (budget) DPs received by cattle producers in Ireland, UK, France and Germany was undertaken, (working paper No. 4, O'Connell *et al* 1999d). In the guarantee payments the major components in this period were: the premiums paid on suckler cows, special beef premiums, deseasonalisation premium, extensification and the calf processing premium. The guidance payments were paid to producers in disadvantaged areas as "headage" on cattle, sheep and horses.

The analysis of the guarantee payments showed that:

- the value of the DPs received by Irish cattle farmers increased almost **four-fold** in the period 1993-1997, and by 1997 these were equivalent to 75 Irish pence per kg on all beef produced in Ireland, equivalent to IR£255 (approx. €323) per 240 kg carcass
- on a per kilo of beef produced (gross indigenous production), Ireland had consistently received significantly more than the EU as a whole, the ratio being approximately 2:1
- the Irish performance was very good compared with Germany, considerably better than France and generally better than the UK.

These more comprehensive results confirm the earlier conclusion (Dunne *et al* 1997a,b) that Ireland performs very well in terms of ability to access the animal-based DPs.

The general conclusion was that Ireland has done well from the animal-based DPs. Thus, while cattle farmers in Ireland may obtain the lowest beef prices in the EU, (see section 3.5.1) they also obtain the highest DPs per kilo of beef produced. And on a combined price and DP basis Ireland was usually ahead of the EU average and generally on a par or ahead of the French position. These results were used in the formulation of the recommendations in relation to the Agenda 2000 proposals, (see summary Chart 1 in section 3.6.5 below).

3.5.5 DPs and cattle margins

After the 1992 CAP reform, the DPs became a major source of revenue for cattle farmers in Ireland (see annual review of the cattle sector in Ireland, by Dunne *In* Teagasc, Situation and Outlook reports). The scale of the impact on the margins for the cattle enterprise on the farms in the Teagasc, National Farm Survey (NFS) over the five year period 1993 to 1997 was evaluated, (working paper No. 5, Dunne *et al* 1999). The main findings and implications were:

- Irish cattle farmers have a very high and increasing reliance on DPs for their margins and income plus this dependency would be expected to increase further under Agenda 2000

- the switch to DPs introduced a level of stability into the overall margins and incomes of Irish cattle farmers because the DPs themselves were predictable and the level of pay-out could be adjusted administratively from year to year

- all cattle farmers obtained DPs directly, but some farmers, most notably cattle breeder-rearer's and dairy farmers, also obtained significant indirect benefits from the capitalistion of DPs into calf and young animal prices

- the management emphasis in Irish cattle production systems could increasingly move away from consumer requirements to the compliance criteria for the DPs due to the very high dependence by farmers on the DPs for their income

- As the shift to DPs, (including extensification) intensifies an increasing portion of their value becomes capitalised into the prices of young animals and land rental charges and

- while the eligible animal-land link remains the capitalisation of a portion of the value of individual DPs into these key assets:
    - causes significant leakage of an increasing portion of the value of the DPs towards calf suppliers and land owners

    - limits the capacity of active producers to reduce costs, especially for farmers who are exclusively involved in the fattening stages of production

    - intensifies the dependence on DPs for income, especially those primarily involved in the final production phases

    - intensifies the incentive for farmers to comply with the administrative requirements (mainly eligible animals and stocking density) to ensure full access to all the DPs

- increases the incentive for farmers to dispose of animals that do not collect DPs or even those that secure only small DPs relative to their cost contribution to stocking density calculations

- increases the incentive for farmers to dispose of eligible animals once they have collected the DPs and thereby limit the incentive to ensure good animal conformation and finish

- increases the isolation of producers from the market and consumer requirements for beef

- increases the incentive for farmers to maintain, and on very lowly stocked farms to actually increase, the number of eligible animals to collect extra DPs and income

- limits the overall capacity of the beef sector to reduce the number of eligible animals which would aid the downward adjustment of beef supply, improve market balance and consequently strengthen beef prices

- reduces the capacity of policy makers to target income supports to farmers on the basis of need due to the economic incentive to trade animals to find their "optimum stocking density farm" to capture the DPs and also the leakage of part of the value of DPs to calf suppliers and land owners.

These findings also provided very strong evidence that the current method of administering DPs through the system of eligible animals within defined stocking densities is essentially a "flat area aid" mechanism, Figure 1.

As Figure 1 shows, the total value of DPs per hectare of utilisable agricultural area was almost constant across farm sizes[10]. However, the composition[11] of the DPs, or premium type, obtained by the various size categories reflected the types of eligible animals on the farms of different sizes. The overall inference being that the individual animal-based DPs provide a circuitous and poorly targeted income system and it was achieved at high cost in terms of: product quality, increased cattle trading and general administration.

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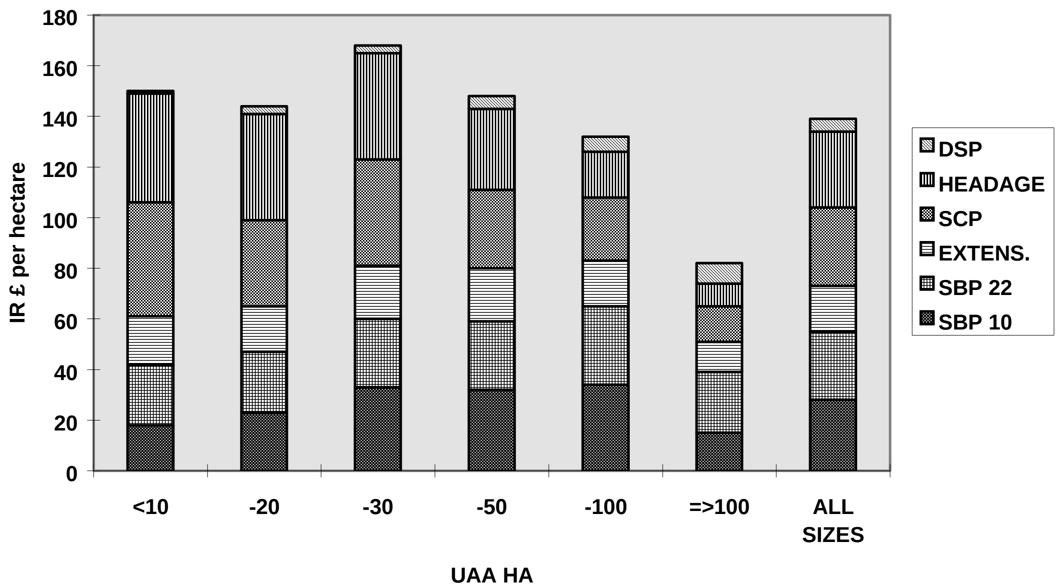
[10]This evidence was the outcome of an analysis of different types of cattle enterprises on farms in the Teagasc, National Farm Survey for 1995, the final year of the phased implementation of the 1992 CAP reform, Dunne and O'Connell, 1998.

[11]Figure 1, premium types were: DSP = deseasonalisation premium, Headage = disadvantage areas payment, SCP = Suckler Cow Premium, EXTENS = extensification premium, SBP 22 = Special Beef Premium paid on steers 22 months old, and SBP 10 = Special Beef Premium paid on steers 10 months old.

These findings confirmed the observations and conclusions established from the earlier research. Furthermore, the additional switch to DPs planned in Agenda 2000 could but only increase these problems. Consequently, these results were used in the formulation of the recommendations in relation to the Agenda 2000 proposals, (see summary Chart 1, section 3.6.5).

Figure 1 : Value of Cattle Direct Payments per hectare for Ireland



3.6 Agenda 2000

The initial "Santer" proposals for the Agenda 2000 reform of the CAP were published in July 1997. A revised set of proposals for product prices and DPs, prepared and published by Commissioner Fischler, in March 1998. Both sets of proposals were evaluated in detail and recommendations were developed for use during the negotiations leading up to the final Agenda 2000 agreement.

The "Santer" proposals for beef in the Agenda 2000, published in July 1997 were essentially more of the same: reduce the support price for beef and increase the value of the DPs for eligible animals. However, a number of innovative long term policy objectives for the CAP were also outlined which could be summarised as follows:

- improve the competitiveness of EU agriculture both on the domestic and export markets
- improve food safety, quality and product image
- incorporate environmental friendliness and animal welfare considerations into production methods
- integrate environmental goals and develop the role of farmers in the management of natural resources and landscape conservation

- ensure a fair standard of living for the agricultural community and stable farm incomes
- create complementary income and employment opportunities for farmers and their families
- enhance economic diversification of agricultural and rural policies to improve economic cohesion.

These policy objectives are clearly highly compatible with the alternative whole farm policy concept for administering DPs for beef outlined earlier by Dunne (1996f).

Capitalising on the experience gained from the earlier policy evaluation research, the implications of the proposals on product prices and direct payments were analysed and the results were published, Dunne 1997j, 1997k, 1997m. In addition, a number of public presentations were made on the impact of the proposals at meetings and seminars for farmers and agri-business groups.

Arising from this research, a number of benefits and downsides were identified, some of which accrue at the commodity level in terms of prices and exports while others arise for the individual farmer.

3.6.1 The benefits

The main benefits identified for Irish agriculture were:

- For product (meat, cereals and milk) prices and exports:
    - The elimination of the gap between EU and world prices would reduce product prices to the level where EU export subsidies may not be required and GATT volume constraints would cease to apply
    - Lower cereal prices would result in reduced concentrate feed costs making it possible to export pig and poultry meat without subsidies and again avoid GATT constraints on subsidised exports and therefore less price competition for beef within the EU in periods of excess supplies
    - A lower beef support price may facilitate the export of small quantities of beef without subsidies and therefore ease the GATT volume constraints somewhat
    - Lower cereal prices would increase their use in concentrate feeds and result in lower feed costs for pigs and poultry and an expansion of pig and poultry production and consumption of these meats. But
    - The lower cereal prices and concentrate feed costs would be of little benefit to beef, especially grass based beef production
    - The expansion in cereal consumption and exports would reduce the EU expenditure on grain purchase and storage and thereby reduce the overall pressure on the budget for agriculture.
- For farmers:
    - The incomes of cereal and beef producers and, to a lesser extent, dairy farmers in the EU could be maintained through the increased use of DPs

- The value of the DPs, unlike product prices, were readily predictable as they are fixed in advance and therefore would provide a stable source of revenue
- The crop and animal production systems post 2000 would likely be more environmental friendly due to the changes in the compliance conditions for DPs and the incentive to extensify animal production.

3.6.2 The downside

The main negatives identified were:

- For product prices and exports:
    - The likely elimination of intervention stocks for cereals would reduce their buffering effect on prices in the event of unexpected poor harvests
    - The elimination of intervention stocks would compel grain merchants and traders to finance and carry higher stock inventories to ensure that seasonal supplies match the much less seasonal demand
    - Internal EU grain prices would be likely to fluctuate in harmony with world prices
    - The greater fluctuations in the EU grain prices would increase the year to year volatility of: feed costs, margins for pig and poultry producers, whitemeat supply and prices
    - The increased volatility in the prices of whitemeats would also affect their price competiveness with beef and tend to increase the unpredictability of cattle prices and the market based margins (margins without DPs) to cattle farmers

- For farmers:
    - The market based margins for both cereals and cattle would be volatile, small and may even be negative
    - Small and unpredictable market based margins would encourage production systems to move towards the compliance criteria for the DPs: low input-output systems, spring barley, seasonal grass based beef supply and conformity with REPS
    - Unless the technical specifications of the compliance criteria for DPs were realistic, there could be significant reductions in product output and quality (see earlier observations in section 3.5.5 above)
    - The cost of producing a tonne of grain could be higher than justified by grain prices because the "eligible land" requirement would increase land rental charges and land prices
    - The cost of producing a kilo of beef could remain high due to the ever tightening link between the DPs which were increasing in value and a static or declining pool of "eligible animals" and the limits on stocking density. This would cause calf prices and land rental charges to remain high, even when the price of beef declines, (see earlier observations in section 3.5.5 above)

3.6.3 Competitiveness issues

Apart from the above macro and farm level impacts, a number of features which could affect inter-country competitiveness were identified. The main ones were:

- The proposed increase in the bull beef premium was much greater than for steers and this would favour producers on the Continent as their production systems were based on bulls (for implications see End of Project Report No. 4314 by Dunne *et al* 2001)
- The proposed dairy cow premium had two components: a fixed value "beef" component equal to about one-third, and a variable component which was to be adjusted for "average milk yield". The beef component erroneously implied that cow replacement rates and cull carcass weights were similar across countries but no method for average milk yield was specified[12].
- The proposed elimination of the maize silage subsidy and the possibility for including maize silage land for estimating stocking densities raised a number of issues. These relate to the technical and economic feasibility of switching land use between individual crops and the use of alternative feed sources for bovine animals, (see Dunne 1997j and 1997m for further details).

3.6.4 The revised proposals

The proposals on product prices and DPs were subsequently modified in the "Fischler" document published in March 1998. The revised proposals addressed some but not all of the major concerns expressed by the various interest groups in relation to the 1997 proposals. The main changes were:

- Using aids to private storage (APS) to replace intervention purchases for beef but retaining intervention for cereals and milk (see section 3.5.3 above *vis-à-vis* the implications for the marketing of Irish beef)
- Increasing the value of the extensification premium almost threefold
- Introduction of a series of technical changes in relation to the administration of DPs for beef which further increased the complexity of the operating system. The main administrative changes were:
    - Recasting the criteria for calculating stocking densities to include all animals rather than just eligible animals
    - Redefining "eligible animals" such as suckler cows and maiden heifers
    - Introducing the concept of a "national envelope" of revenue based on the tonnes of beef slaughtered in each country
    - Introducing an option to use area payments for some DPs (national envelope) for cattle – a tentative move towards the earlier proposal by Dunne (1997f)
    - The DPs for dairy cows were to be based on National and individual milk quotas divided by average EU yield. This subsequently became known as the "virtual cow"

[12] There was serious concern that such an institutionalised definition of a dairy cow could have important implications in the future for both milk policy changes and the calculation of stocking densities especially in relation to the animal-based DPs for beef. But the "virtual" cow idea was eventually discarded in the final Agenda 2000 agreement.

Somewhat surprisingly even in 1998, the DPs for all of the commodities were still being denoted in the EU proposals as compensation for past and current price reductions.

3.6.5 Recommended changes

A review of the Fischler proposals was prepared and published in 1998, Dunne 1998b. A number of recommendations and strategies in relation to the Agenda 2000 negotiations were prepared. These recommendations were greatly conditioned by the published and unpublished research findings on policy development research (see section 3.4 above) and the working papers on developing an EU single market for beef (see section 3.5 above). This research was also supplemented by an additional analysis of the cattle enterprise on the farms in the Teagasc, NFS to establish the impact of both sets of proposals on incomes and margins.

The results were made available at the beef consultative group[13] on Agenda 2000 that was established by the Minister for Agriculture. A series of strategy/policy recommendations were developed in a summary format (see Chart 1 below) and made available with the supporting evidence to the Beef Policy Consultative Group established by the Minister for Agriculture. In addition, public presentations on the impact of the Agenda 2000 proposals and related recommendations were made at a number of meetings and seminars for farmers and agri-business groups.

These recommendations were based on the earlier analysis which showed that Ireland had benefited greatly from the special beef premium (SBP) and extensification, due to the combination of size of the quota for SBPs obtained in1992 and the payment of two SBPs and related extensification premiums during the lifetime of steers. However, this situation was being progressively eroded by:

- the introduction of a higher rate for the single payment for bulls after the 1996 BSE crisis, and
- the use of the tonnes slaughtered as the basis for the calculation of the national envelopes for DPs in the agenda 2000 proposals and agreement.

Furthermore, there was a concern that once the principle of using slaughterings became established as the key for inter-country allocations of DPs there would be a high probability that it could be used for all cattle DP allocations in the future. From Ireland's perspective, a better alternative for deciding the size of national envelopes would be the proportion of the area devoted to cattle production. Estimates were made and these indicated that by using this method, Ireland's allocation would be almost 10% compared with about 8% when based on tonnes slaughtered, a difference of IR£60 (equivalent to €76) million per year.

In the final Agenda 2000 agreement the definition of dairy cows did not feature and the DPs for milk were eventually based on litres of milk sold, i.e. milk quotas. Similarly, the proposals on maize silage were dropped and the maize silage subsidy was retained in its original format.

[13] The primary author was a Teagasc representative on this Ministerial Consultative Group

Chart 1: Strategies and objectives for Agenda 2000 negotiations

Income support	Aim for maximum switch-over to DPs because: (a) Ireland gets above average benefit from DPs but below average return from price support (b) Change while the EU budget can afford it
Intervention APS	The value of intervention buying has largely been eroded. Seek alternatives such as mechanisms for: (a) price equalisation/convergence (b) revenue (price + DP) equalisation/convergence
National Envelope	Aim for an allocation key based on the area devoted to beef in each member state. Benefits: (a) Ireland could get 9-10% of the total (b) establish the principle for later use for decoupling for WTO
Direct Payments (DP)	Objectives would be: (a) long term to get: (i) an EU allocation per hectare based on area devoted to beef and (see national envelope above) (ii) a National distribution where the rate per hectare declines as the farm size increases (b) Agenda 2000 to get: (i) a better share from the national envelope fund (see above) (ii) more funds for the suckler cow premium (SCP) (iii) a single but "big" premium for beef type heifers payable at slaughter under 20 months (quality and stocking density) (iv) no premium for dairy type heifers to encourage their use for veal and reduce beef supplies
Stocking Density Limits for Extensification	(a) accept 1.4 to maintain the competitive advantage vs: (i) intensive bull beef and (ii) encourage the release of calves from intensive dairy farms. (b) base the stocking density calculations on: (i) **virtual EU dairy cows** to release more area for beef and reward the less intensive dairy farmer for supplying more of the non-holstein type calves (ii) **SCP applications** (allows for hidden cows or heifers which could supply calves year t or t+1) (iii) **SBP applications** (10 and 22 months) (iv) **beef heifer premium applications** (slaughter) **but use an LU of 1 to allow for age** (2x 0.6x 20/24) and encourage the animal onto fattening farms where stocking densities are not too tight.

Source: Compiled by Dr. W. Dunne and Dr. J.J O'Connell for a meeting of the Beef Policy Consultative Group established by the Minister for Agriculture.

3.6.6 Agenda 2000 agreement

The EU farm Ministers reached agreement in March 1999. The Agenda 2000 agreement established the economic framework under which cattle, dairy and tillage farmers were to operate for most of the first decade of the new millennium. However, the Heads of States meeting in Berlin a few weeks later retained the structure of the Agenda 2000 agreement but modified the actual scale of the changes[14]. Consequently, the reductions in support prices were less and the increase in the value of the DPs was correspondingly reduced.

The respective changes for tillage, cattle and milk were to be phased in over 2, 3, and 7 years beginning in the year 2000.

The main changes and their estimated impacts were outlined in a number of review articles prepared and published in 1999, (Dunne 1999a, 1999b and 1999c). The main conclusion was that Ireland was unique in the EU in that it could actually gain from the additional switch-over from price support to DPs, especially for beef, (see income support section in Chart 1 above). It was estimated that:

- the national gain arising from the extra and increased value of DPs for cattle could be about IR£160 (equivalent to €203) million in the year 2000 but rising to about IR£300 (equivalent to €380) million by 2002

- The gains from the DPs for beef could be reduced by about IR£60 million per year if cattle prices declined in line with the reduction in the intervention price

- The extra benefits from the DPs would be only fully dissipated if the price of beef was to decline to about IR£1.30 (€1.65) per kilo equivalent to 60 IR pence per pound or about 25% lower than 1999 prices which are already low

- The margins for the cattle enterprise over the implementation period for Agenda 2000 could increase by up to 30% over the 1999 levels if cattle prices are maintained

- The criteria for extensification and the choice of the two options implemented by the Irish government would greatly influence the total revenue secured and its distribution among the different types of cattle farmers. It was probable that the single extensification premium set at the 1.4 LU/hectare limit would provide the best outcome in terms of: total revenue, revenue targeting and undesirable knock-on impact on other farm enterprises[15]

- land could shift from cereals into cattle production as farmers respond to the more favourable economic outcome for the cattle and the increased

[14] Such an abrupt change was merely another manifestation of the volatility of the policy making throughout the 1990's, further reinforcing the disregard for the transaction cost implications.

[15] See Chart 1 above, and the subsequent working papers No. 6 and No. 7 on the extensification system.

requirement for extra land to gain access to extensification payments, unless cattle prices declined further

- Irish tillage farmers would increasingly switch to spring cereals, probably barley, and also join REPS except on the very large cereal farms. This change would be a response to low and uncertain cereal prices and market based margins

- Dairy farmers would benefit from: the immediate implementation of the extra milk quotas, the direct and indirect income arising from the increase in the value of the DPs for cattle plus the payment of the DPs on eligible male animals at a younger age – by one month. They would also benefit from the extra revenue for extensification[16], especially if the dual stocking rate premium system was selected

- The direct and indirect cost of the DP system would be greatly increased by the additional complexity of both the DP system itself and the related compliance criteria.

[16] See working papers No. 6 and No. 7 on the extensification system, and related End of Project Report No. 4831 by Dunne *et al*)

4 Bibliography

The following list includes publications arising from this and related research projects.

Dunne, W. (1994) *Farm revenue mix: the impact of direct payments.* Pages12-13, Teagasc, To-days Farm, November-December, 1994.

Dunne, W. (1995a) *The EU grain and feed market – turbulence ahead.* Pages 24-25, Teagasc, To-days Farm, March/April 1995.

Dunne, W. (1995b) *Concentrates chalange silage following CAP reform.* Pages 52-53, Teagasc, To-days Farm, May/June 1995.

Dunne, W. (1996a) *US agriculture, the signals for Europe.* Pages 32-33, Teagasc, To-days Farm, May/June 1996.

Dunne, W. (1996b) *What to do with the beef surplus.* Pages 49-50, Irish Farmers Monthly, July 1996.

Dunne, W. (1996c) *Low grain stocks provide a welcome breathing space for beef.* Irish Farmers' Journal, October 5, 1996.

Dunne, W. (1996d) *The beef price dilemma.* Pages 6-7, Teagasc, To-days Farm, November-December, 1996

Dunne, W. *Cattle.* (1996e) *In* Situation and Outlook in Agriculture, Agri-Food Economics, Teagasc 19 Sandymount Avenue Dublin 4.

Dunne, W. (1996f) *Beef production performance and prospects.* Paper, 12 pages, *In* proceedings of Teagasc, Agri-Food Economics conference, December 1996.

Dunne, W. (1997a) *A strong Punt: what it means for Farmers,* Teagasc, To-days Farm, Jan-Feb, pages 8 and 9, 1997.

Dunne, W. (1997b) *Market Oriented direct payments for Beef*, Teagasc, To-days Farm, January-February, page 18, 1997

Dunne, W. (1997c) *Revenue from Direct payments in beef production*, pages 149-150, *In* proceedings, Agricultural Research Forum, UCD, April 1997.

Dunne, W. (1997d) *Agri-monetary induced product price adjustments*, The Tillage Farmer, volume 4, number 5, pages 25-26, April 1997

Dunne, W. (1997e) *The Agri-monetary System: Devaluations and Revaluations*, paper 12 pages, Rural Economy, Teagasc, May 1997

Dunne, W. (1997f) *Revenue from Direct Payments in beef production,* Abstract, Irish Journal of Agriculture and Food Research, p 109, Volume 36, number 1, June 1997.

Dunne, W. (1997g) *Green pounds or euros,* Teagasc, To-days Farm, page 37, July-August, 1997.

Dunne, W. (1997h) *Area aid: options for the future*, The Tillage Farmer, volume 5, number 1, pages 24-25, July-August, 1997.

Dunne, W. (1997i) *Green pound devaluation probable*, Teagasc, To-day, Autumn 1997.

Dunne, W. (1997j) *Agenda 2000: the Santer Proposals*, Teagasc, To-days Farm, pages 49-51, September-October, 1997.

Dunne, W. (1997k) *Implications of Agenda 2000 for farmers*, Teagasc, To-day, Autumn, 1997.

Dunne, W. (1997*l*) *Green currency devaluations, In* Situation and Outlook, Teagasc, December, 1997.

Dunne, W. (1997m) *Agenda 2000: the Santer proposals an economic appraisal*, *In* proceedings, Agri Food Economics Conference pages 59-65, published by Teagasc December 1997.

Dunne, W. (1997n) *The cattle sector, In* Situation and Outlook, published by Teagasc, December 1997.

Dunne, W. (1998a) *What drives calf prices ?.* Teagasc, To-days Farm, pages 26-27, January/February, 1998.

Dunne, W. (1998b) *The Fischler proposals: further development required*. Comment *In* Farm and Food Volume 8, No. 1 Spring 1998.

Dunne, W. (1998c) *Direct payments: case for change*. Teagasc, To-days Farm, pages 36-37, July/August, 1998.

Dunne, W. (1998d) *Tigers, bears and the global food economy*, Teagasc, To-days Farm, pages19-20, September/October, 1998.

Dunne, W. (1998e) *The cattle sector, In* Situation and Outlook, published by Teagasc, December 1998.

Dunne, W. (1999a*) Farming under Agenda 2000. Pages 23-24, The Tillage Farmer, Vol. 6 No. 5, April 1999.*

Dunne, W. (1999b) *Cattle farming post Agenda 2000.* Teagasc, To-days Farm, pages 44-45, May/June, 1999.

Dunne, W. *(1999c)* Adjusting to Agenda 2000, *pages 18-19, The Tillage Farmer, Vol. 7, No. 3, December 1999.*

Dunne, W. *Cattle*. (1999d) *In* Situation and Outlook in Agriculture, Agri-Food Economics, published by Teagasc 19 Sandymount Avenue Dublin 4.

Dunne, W. (2000a) *Shaping a future in farming.* Teagasc, To-days Farm, p 6-8, January/February, 2000.

Dunne, W. (2000b) *The drivers of change.* Teagasc, To-days Farm, pages 40-41, March/April, 2000.

Dunne, W. (2000c) *The beef industry of the future.* Pages 141-142, Profitable production of quality beef, Teagasc Grange Research Centre, May 2000, ISBN 1 84170 105 X.

Dunne, W. (2000d) *The upsizing of Irish farming: will it happen ?* Teagasc, To-days Farm, pages 44-45, May/June, 2000.

Dunne, W. Cattle. (2000e) *In,* Situation and Outlook in Agriculture, Agri-Food Economics, published by Teagasc 19 Sandymount Avenue Dublin 4.

Dunne, W., Drennan, M., and Keane, M.G. (1997a) *Performance in beef production,* pages 146-147. *In* proceedings, Agricultural Research Forum, UCD, April 1997.

Dunne, W., Drennan, M., and Keane, M.G. (1997b) *Performance in beef production*, Abstract, Irish Journal of Agriculture and Food Research, p109, Volume 36, No.1, June 1997.

Dunne, W., Fingleton, W. and Heavey, J. (1994*) Some consequences of GATT for Irish agriculture.* Teagasc, Rural Economy report,18 pages, March 1994,ISBN 0 948321 85 7.

Dunne, W., Murphy, H., O'Connell, J.J., Drennan, M.J., and Keane, M.G. (2001) *Inter-country cost comparisons in beef.* End of Project Report, No. 4314, Teagasc, Rural Economy Research Centre. ISBN 1 84170 221 8, May 2001.

Dunne, W. and O'Connell, J.J. (1994) *The implications of CAP reform for the Irish feed grain market.* Report, 43pp, Teagasc, Rural Economy Research Centre March 1994, ISBN 0 948321 75 X.

Dunne, W. and O'Connell, J.J. (1996) *Market oriented direct payments for beef.* Confidential report, submitted to Department of Agriculture Food & Forestry, October 14th, 2006.

Dunne, W., and O'Connell, J.J. (1998) *Consumer oriented direct payments for beef producers*. Paper (14pp) presented at 56th EAAE seminar on long term prospects for the beef industry, Bercy-Expo Paris, 26-27 February 1998.

Dunne, W., and O'Connell, J.J. (1999) *Public good issues in direct payments for livestock producers.* Invited paper (5 pages) presented at Livestock Farming Systems conference, European Association for Animal Production (EAAP), Fribourg, Switzerland, August 1999.

Dunne, W., and O'Connell, J.J. (2000a) *Public Good issues and livestock farming.* Pages 169-170, summary of papers presented at the Agricultural Research Forum, Faculty of Agriculture, UCD, Belfield, Dublin 4, March 2000.

Dunne, W., and O'Connell, J.J. (2000b) *Public Good issues and livestock farming.* Abstract *In* Irish Journal of Agricultural and Food Research, Vol. 39, No. 3.

Dunne, W., and O'Connell, J.J. (2000c) *The main sources and components of farm incomes in the 21st century.* Pages 25-39, proceedings of Agri-food Economics conference, Teagasc December 2000.

Dunne, W., and O'Connell, J.J. (2000d) *Public good issues in direct payments for livestock producers*. Pages 134-138, Proceedings of the fifth international symposium on livestock farming systems, EAAP Publication No. 97, 2000, ISBN 90 74134 79 3

Dunne, W., O'Connell, J.J., and Shanahan, U. (1998a) *The impact of direct payments on calf prices*, *In* proceedings, Agricultural Research Forum, UCD, pages 25-26, March 1998.

Dunne, W., O'Connell, J.J., and Shanahan, U. (1998b) *The impact of direct payments on calf prices*. Abstract, Irish Journal of Agriculture and Food Research, Volume 37, No. 1, pages 104-105, Teagasc,1998.

Dunne, W., and O'Neill, R. (1995) *Valuing silage post CAP reform.* Pages 63-64 Proceedings, Agricultural Research Forum, UCD, March 1995.

Dunne, W., and O'Neill, R. (1995a) *Valuing silage post CAP reform.* Abstract, *In* Irish Journal of Agriculture and Food Research, p84, Volume 34, number 1.

Dunne, W., and O'Neill. R. (1995b) Analysis of the efficiency of the beef sector. 23 pages, *In* proceedings of the Agri-Food Economics Conference, December 1995, Teagasc, 19 Sandymount Avenue Dublin 4.

Dunne, W., O'Neill, R. and McEvoy, O. (2001) *Economics of cattle production systems post CAP reform.* End of Project Report, No. 4017, Teagasc, Rural Economy Research Centre. ISBN 1 84170 161 0, January 2001.

Dunne, W., O'Riordan, E. and Troy, D. (1999) *Foresight for the beef industry 2010.* Pages 65-71, *In* proceedings of Agri-Food millennium conference, Teagasc, December 1999.

Dunne, W., and Shanahan, U. (1999a) *Margins for the cattle enterprise.* Pages 161-162, *in* summary of papers presented at Agricultural Research Forum, UCD, Belfield, Dublin 4, March 1999.

Dunne, W., and Shanahan, U. (1999b) *Margins for the cattle enterprise.* Abstract *In* Irish Journal of Agricultural and Food Research, Vol. 38, No. 2, page 286, 1999.

Dunne, W., Shanahan, U., and O'Connell, J.J. (1999) *Direct payments and cattle margins in Ireland*. Working paper No. 5 (20 pages), *In* Development of a strategic approach for a single EU beef market, Rural Economy, published by Teagasc, 19 Sandymount Avenue Dublin 4, October 1999.

Dunne, W., Shanahan, U., and O'Connell, J.J. (2000) *Extensification: an analysis of National and competitive issues*. Working paper No. 6, (26 pages) *In* Development of a strategic approach for a single EU beef market, Rural Economy, published by Teagasc, 19 Sandymount Avenue Dublin 4, August 2000.

Dunne, W., Shanahan, U., and O'Connell, J.J. (2001) *Extensification: an analysis of National and competitive issues*. Working paper No. 7, (25 pages) *In* Development of a strategic approach for a single EU beef market, Rural Economy, published by Teagasc, 19 Sandymount Avenue Dublin 4, August 2001.

Dunne, W., Shanahan, U., and O'Connell, J.J. (2008) *The impact of feed resource costs on the relative competitiveness of beef with other meats.* End of Project Report, No. 4018, (32 pages), Teagasc, Rural Economy Research Centre.

O'Connell, John., Dunne, Liam., and Shanahan, Ultan. (1999a) *Cattle and Beef Prices in the EU*. Working Paper No. 1, Rural Economy, published by Teagasc, 19 Sandymount Avenue, Dublin 4, June 1999.

O'Connell, John., Dunne, Liam., and Shanahan, Ultan. (1999b) *An evaluation of Changes in the Intervention System and Labelling regulations on relation to Irish Cattle Prices*. Working Paper No. 2, Rural Economy, published by Teagasc, 19 Sandymount Avenue, Dublin 4, June 1999.

O'Connell, John., Dunne, Liam., and Shanahan, Ultan. (1999c) *Aids to Private Storage - an evaluation*. Working Paper No. 3, Rural Economy, published by Teagasc, 19 Sandymount Avenue, Dublin 4, June 1999.

O'Connell, John., Dunne, Liam., and Shanahan, Ultan. (1999d) *Inter-Country Comparisons of Direct Payments and Total Revenue for Beef*. Working Paper No. 4, Rural Economy, published by Teagasc, 19 Sandymount Avenue, Dublin 4, June 1999.