REPS 3
Assisting Change in Farming

Proceedings

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The Opportunities of Organic Farming in REPS

Frank Macken
Department of Agriculture & Food

The growing consumer interest in organic farming and organic food in general is paralleled by the ongoing debate on organic farming and where it is positioned in the context of EU and, for that matter, World agricultural, environmental policy and trade.

- Organic farming is becoming a major opportunity for food producers in Europe, due to growing consumer interest for certified organic products. This market led demand provides the potential to create income for Europe's farmers.
- Organic farming is a highly relevant tool, which contains the potential to participate in solving simultaneously a range of problems related to food production, environment, animal welfare and rural development.
- Organic food should be developed further in Europe.

In the last ten years organic farming has developed from a marginal sector restricted largely to the local market, into a vibrant sector of national, European and international trade. The organic industry has experienced rapid growth throughout the world. To date some 60 countries, as diverse as Iceland and China, have implemented, finalised or initiated the drafting of organic production standards and regulations. In relation to the World Trade Organisation – International Trade Agreements and Agriculture, organics like agri-environmental payments to farmers is currently classified in the Green Box; i.e. Subsidies that do not distort trade or cause minimal distortion. These subsidies are not subject to reduction commitments, but must be government-funded (not by charging consumers higher prices) and must not involve price support.

Organics in now a worldwide, codified and accepted food production system with real markets; creating real opportunity for producers. We need to wake up to this opportunity and develop organic production in Ireland to realise its potential.

Agricultural and environmental policy now provides the regulatory framework for all economic and political measures designed to influence the agribusiness sector. The nature of these interventions has a significant influence on the sector and reflect public and political opinion, perceptions and expectations on what agriculture should deliver.

In the 1970s organic farming aligned itself with the fledgling environmental movement, which was then raising awareness of environmental issues of concern and suggested the possibilities that organic farming could contribute to their resolution. This awareness was advanced and resulted in a desire to give political support to organic farming which eventually resulted in the growth in demand for organic food and political interventions to protect, support and advance the sector. Until the 1980s organic farming was in essence a social movement; basically opposed to conventional farming and to much of the institutional bureaucracy and policy surrounding agriculture per se. Organic farming largely developed outside the agricultural establishment and its institutions. Organic farming was initiated by individuals and institutions which are not part of mainstream agriculture. The institutional arrangements of these organisations have clearly influenced the development of

organic farming. The established institutions countered by ignoring the existence of organic farming or viewing it as a backward technology that refused to live in the real world. A sea change took place as the eighties drew to a close. This was due mainly to the perceived need to regulate the sector: albeit that the private organic bodies had heretofore developed organic standards for their members - the absence of legal protection meant that conventional products could be sold as organic and terms such as ecological, natural and biological could be applied to conventional foods. The need for consumer protection and market transparency provided justification for political action. The environmental lobby gained considerable influence during the 80s and the growing public interest in environmental matters led naturally to a greater empathy for organic farming that resulted in a demand to give it political support for environmental reasons. Thus the link between environment and organic farming was secured.

The political intervention in the business of organic farming posed many problems for both the organic movement and the bureaucratic machine. Initially the more traditional section of the organic movement naturally resented being, as it were, usurped and controlled from unhigh; they were suspicious of the real motives for the sudden interest in organic farming and feared that their long held principles would be diluted by those who did not have the same zeal and commitment to the sector. The legislators on the other hand, found it difficult to engage with the organic movement and provide them with a stakeholding in their affairs. At EU level it was difficult to find consensus among the organic farming movements who, while generally agreeing on the principles of organic production, differed in their approach to the practical details. Notwithstanding the initial difficulties a new understanding has emerged where organic farming has positioned itself as a bridge between agriculture and environmental policy.

The first European wide policy intervention on organic farming was introduced as recently as 1992 when an EU Council Regulation put the responsibility on each Member State to establish a state supervised certification system for organic food and farming which would guarantee consumers that products labelled as organic were genuine and produced according to accepted organic standards. This led in Ireland to the designation of the Department of Agriculture and Food as the competent authority with overall responsibility for organic production and its control and the establishment of an organic certification process via the authorisation of the three private organic bodies to license organic operators.

The second intervention was the introduction of financial support programmes to encourage entry into the sector in certain Member States most noticeably Denmark and Germany in the late 1980's and then extended to the whole EU as part of the 1992 Common Agricultural Policy (CAP) reform. With the growing interest in organic farming in Ireland throughout the eighties and the timely introduction of the EU agri/environment policy mechanism, the Department of Agriculture and Food introduced financial support for those farmers who wished to take up the organic option via a supplementary measure in REPS 1.

This financial support will be continued into the new round of CAP funding via the recently published Rural Development Regulation: Council Regulation (EC) No 1698/2005 of 20 September 2005 on support for rural development by the European Agricultural Fund for Rural Development.

The AGRI VISION 2015 COMMITTEE REPORT of November 2004 report that in the case of organic farming in Ireland: " In November 2000, the Organic Development Committee was established on foot of a recommendation in the Agri

Food 2010 Report. In April 2002, the Committee published its Report. This led, inter alia, to the establishment of an Organic Market Development Group under the aegis of Bord Bia with overall responsibility for developing a national marketing strategy for organic food. Bord Bia predicts that the organic sector will show growth in the medium term and has potential for annual growth of 10%. The Committee takes the view that these predictions are unduly optimistic, The value of the European market for organic foods has doubled in the last five years and growth in the short term is expected to be approximately 8% per annum, The organic agricultural sector in Ireland has developed over the last 5 years, but not to the extent envisaged by the 2010 report. Sine 2000, the number of approved operators has increased by only 4%. This limited response by Irish farmers to the economic opportunities in organic production has been due to the substantial costs of switching to organic production systems and the relatively underdeveloped marketing structures for organic produce in Ireland. The development of organic production will, for a small number of Irish farmers, constitute a viable response to the competitive challenges presented by CAP and further agricultural trade reform. Increased consumer demand for organic foods should improve the commercial returns to organic farming. The SFP may impact on the sector as farmers now have a guaranteed level of income support. This may encourage farmers who were not previously producing organic foods to enter the sector. Over time, the financial support provided to farmers who switch to organic production systems should encourage the more rapid development of the Irish organic sector."

Organic farming, according to the definition of Codex Alimentarius adopted by the Food and Agriculture Organisation (FAO) is based on holistic production management systems which promote and enhance agro-ecosystem health, including biodiversity, biological cycles and soil biological activity. It emphasised the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems. This is accomplished by using, where possible, cultural, biological and mechanical methods, as opposed to synthetic materials, to fulfil any specific function within the system. An organic production system is designed to:

- Enhance biological diversity within the whole system;
- Increase soil biological activity;
- Maintain long-term soil fertility;
- Recycle wastes of plant and animal origin in order to return nutrients to the land, thus minimising the use of non-renewable resources;
- Rely on renewable resources in locally organised agricultural systems;
- Promote the health use of soil, water and air as well as minimise all forms of pollution that may result from agricultural practices;
- Handle agricultural products with emphasis on careful processing methods in order to maintain the organic integrity and vital qualities of the product at all stages;
- Become established on any existing farm through a period of conversion, the appropriate length of which is determined by site-specific factors such as the history of the land and the types of crops and livestock to be produced.

This comprehensive definition can provide actions that can be tailored to meet most of the objective and expectations of any agri-environmental measure. Thus organic farming is often proffered as the panacea of many environmental problems and has of late been identified as a possible tool of rural development in that it has the potential to provide employment in its labour intensive production system and can augment

farm household income with the possibility of establishing an alternative enterprise on a farm. In Ireland we are only beginning to see the possibilities provided by organic farming not alone as a contributor to the stabilisation of our farming population, keeping marginal land in production but also as the catalyst to build an organic food processing industry.
In Ireland, unlike some countries who put more emphasis on the environmental benefits, the production of organic food from our land is vital for the long term development of the sector. The organic sector should be a demand driven, responding to the market demand for organic food. To contribute to its maximum organic land must produce organic food. This raw material will be the basis of an organic food sector. An organic food sector must have a critical mass of commodity products to draw from if it is to have the economy of scale to compete in the market place. To date the level of uptake of organic farming has not attracted the large conventional food processors into the sector.

Much debate surrounds the benefits or otherwise of organic farming. The public debate on organic farming centres around the justification of the system in comparison to conventional or other alternative farming systems. The arguments most commonly advanced in favour of organic farming are that it demonstrates a sustainable model of farming as a production system and its contribution to society's needs such as safe food, a clean environment and enhanced animal welfare standards. The public are prepared to pay farmers to deliver these perceived needs. In essence they are purchasing these goods from farmers and expect their delivery. Many are sceptical of organic farming and question the actual benefits delivered. Opponents of organic farming consider it a farming system preferred by romantics who desire to farm in a 19th Century paradigm ignoring the fact that the world has changed. Among their many arguments are lower yields mainly as a result of the rejection of synthetic inputs. Critiques cite the inability of organic farming to produce sufficient food for everyone, the high price demanded for organic food and the real risk of fraud; whether there is any real difference in quality between organic and non-organic food and whether the claims regarding the environmental benefits are real. While the background debate rages on the organic sector continues to develop and as the demand for organic food increases the area devoted to organic production expands to meet this demand.

Unlike most other agriculture sectors organic farming is growing and continues to record year on year growth. Dynamic growth has been recorded in the last decade. It is open to debate whether this phenomenal growth will continue, slow down or level out. It is generally thought that growth will continue at a slower pace and that eventually equilibrium will be reached.
While rapid growth is recorded in absolute terms, the sector is still quite small in Europe covering about 3% of the UAA of Europe. In Ireland some 30,000 ha. Are devoted to organic production; this represents c. 0.7% of our UAA. It is envisaged that this figure will increase significantly over the next years.
In many countries, most notably Germany, Austria and Switzerland, the greatest uptake of organic farming is found in disadvantaged rural areas where extensive agriculture predominates. This is also the case in Ireland with the predominance of organic farming centred in the less favoured areas where extensive forms of animal production: beef, dairy/ suckler cows and sheep predominate. It is easy to understand why this is so. An extensive grass based animal production system relies mostly on forage produced on the farm with little outside inputs. Pesticide and synthetic fertilizer use is low. The switch to organic farming, while involving some alterations

to the farming system, is relatively straightforward. If the conversion to the organic system results in a price premium for the product or agri-environmental payments can be secured for converting to organics then organic farming tends to be more profitable that when farming conventionally. In Ireland with the introduction of the Single Payment and enhanced payments for conversion and continuance in the organic system available in REPS, organic farming is now a real option for farmers and should prove particularly attractive to those with off-farm employment and extensive systems. On the other hand a conventional farmer operating an intensive system be it crops or animals with a heavy reliance on bought in inputs will, when entering into the organic system, require major changes to the farming system to convert to organics. While, in the past, these drastic changes to his/her farming system would most likely dissuade one entering organics, the introduction of the Single Payment may have already pointed to the reduction of stock numbers or a re-evaluation of the current farming system. Again the organic option may be worth considering as a viable option.

An increase in the uptake of the organic option could have a dramatic impact. As the rules of production become stricter, in pursuit of a closed system, non- organic inputs will not longer be acceptable. This will give rise to a demand for organic inputs, which will further stimulate the sector. An example of this is the recently introduced further reduction in the conventional feed allowance for cattle and its eventual withdrawal in August 2007. The decision of farmers to convert to organic farming depends on a number of factors; direct subsidisation of the system being just one. A Census of Organic farmers carried out by the Department of Agriculture and Food in 2003 elicited from organic farmers what were the key barriers to future expansion of their organic business. The related issues of lack of markets and lack of profitability were raised as important barriers. Other issues included over regulation, lack of information and advice. Many of the issues raised are being addressed by the National Organic Steering Group – the driving force established to put the actions outline in the Report of the Organic Development into practice.

REPS planners can do much to inform farmers of the potential of the organic option. While organic farming may not be a viable option for many farmers for one reason or another there is still a large cohort of farmers who could convert to organics with very little modifications to their existing farming systems. There is much demand for organic white meat and vegetables: while these sectors may not appeal to all there are immediate and real opportunities here. The proliferation of farmers markets and other direct sales channels is indicative of the surge in consumer interest in organic foods. A strong buoyant export market for organic beef will be required to provide the encouragement and incentive to beef producers to convert to organics in critical numbers to take this sector forward. This is one of the main challenges for the sector as any programme or initiative to stimulate and encourage farmers to convert to the organic option will inevitably draw more suckler and beef farmers into the system.

The profile of a good organic farmer is the same as a good conventional farmer. The organic farmer does not have the comfort of synthetic inputs when things go wrong. Merely seeking to maximise ones take from REPS by including the organic farming option without the required knowledge or understanding of the underlying principles, standards, controls and the consequences of being in default would be sheer folly. A farmer currently struggling with the technicalities and intricacies of a conventional enterprise will not suddenly become an expert in the organic sector – horses for courses.

Notwithstanding organic farming is an easily understood system of producing quality food to an agreed set of standards that are not beyond the capabilities of most of our

farmers. Organic farming provides a unique opportunity for Irish producers to enhance their incomes by embracing the organic production system. Export potential is there to be exploited. A clearly defined scheme to promote organic farming, which includes generous financial support to those who wish to convert to or continue in organic farming is in place.

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EC (1992): Council Regulation (EEC) No 2078/92 of 30th June 1992 on agricultural production methods compatible with the requirements of the protection of the environment and the maintenance of the countryside, Official Journal of he European Communities L215 (30.7.92): 85-90.

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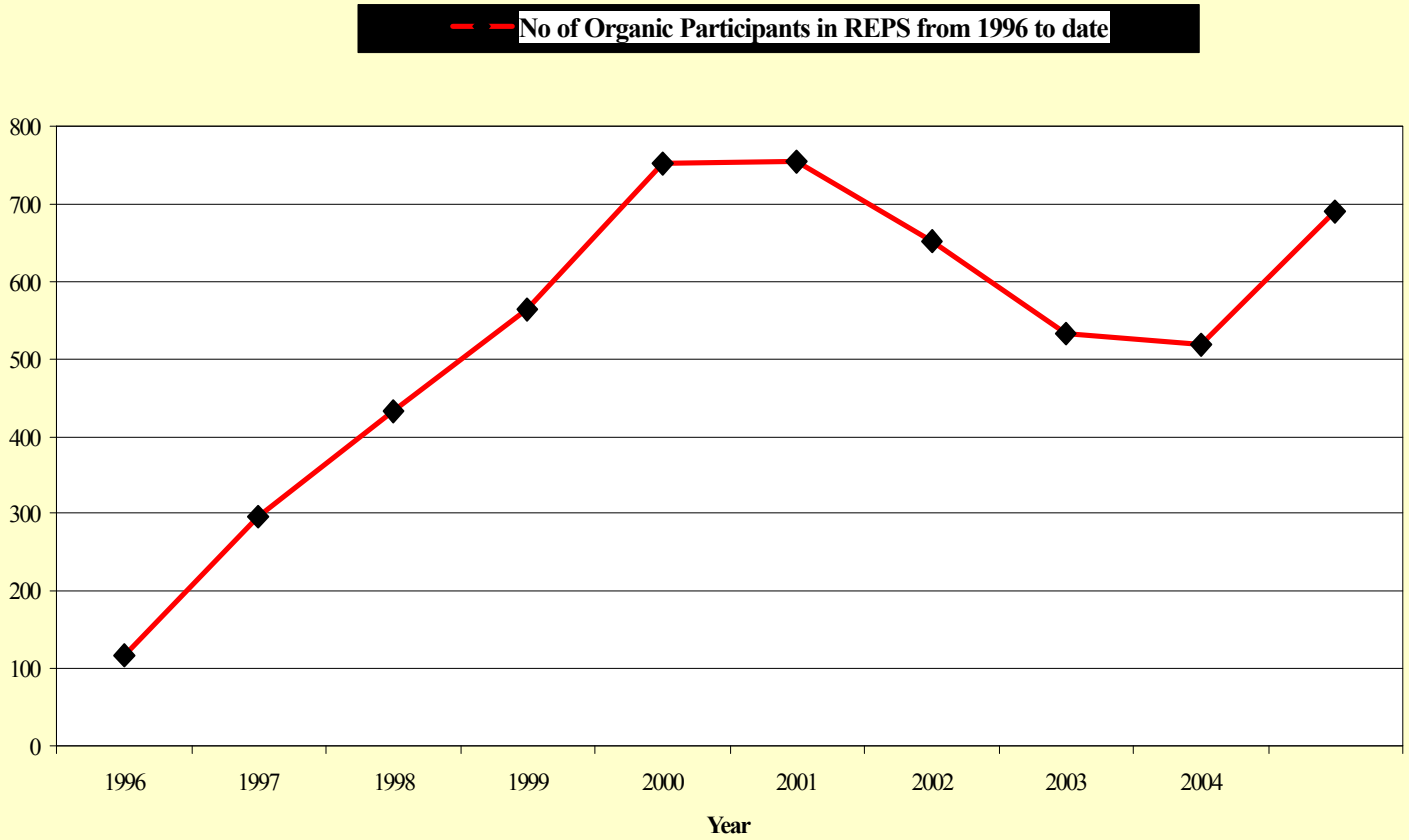
REPS 3 - Organic Supplementary Measure

Payment rates:

	Horticultural holdings of 3Ha or less	Payment per Ha on lands between 3Ha and up to 55ha	Payment per Ha on lands from 56Ha and over
In conversion	€242/ha		
Full organic status			

Examples:

Area **Basic Payment**	Organic Payment - in conversion	Organic Payment - Fully organic	Max payment in conversion	Max payment fully organic
20 ha				
40 ha				
55 ha				


No of Organic Participants in REPS from 1996 to date
800
700
600
500
400
300
200
100
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
Year

18

Organic Certifying Bodies:

Demeter Standards Ltd. (DSL)
IRL-OIB1-EU

Bio-dynamic Agricultural Association in Ireland (B.D.A.A.I.)
Watergarden,
Thomastown,
County Kilkenny,
Ireland.
Irish Organic Farmer's and Growers Association
(IOFGA)
IRL-OIB3-EU

Organic Farm Centre,
Harbour Road,
Kilbeggan,
Co. Westmeath
Ireland
Organic Trust Ltd.,
IRL-OIB1-EU

2 Vernon Avenue,
Clontarf,
Dublin 3.
Ireland

National Parks and Wildlife Service Farm Plan Scheme for Designated Areas and Commange

Dr. Ciaran O'Keefe
Research Manager, National Parks and Wildlife Services

Introduction
The National Parks and Wildlife Service of the Department of Environment, Heritage and Local Government has recently launched its scheme to pay farmers and landowners for costs and losses incurred in the management of lands designated as SAC, SP, NHA or commonage.

The scheme is aimed at any owner or legal user of lands in a SAC, SPA or NHA or commonage (together known as "target areas") who is not already in REPS.

This will meet the obligations laid down in the 1997 Habitats Regulations and meet the promise of Government in relation to compensation.

Whilst it is too early to say who and how many will join the NPWS scheme. It is likely that the typical client will be a farmer or other landowner with lands in a SAC, SPA , NHA or commonage, who is restricted in farming above and beyond the terms of Good Farming Practice and Good Agricultural and Environmental Condition required for the Single Farm Payment and

- who has to change farming practice at a monetary loss in order to comply with the law in relation to designated areas and/or
- is willing to undertake farm management measures to benefit nature in target areas in agreement with NPWS staff
- who cannot or does not wish to join REPS

The scheme may also benefit owners of lands that are not farmed, e.g. woodlands, where designations and management for nature benefit cause loss or additional costs.

The NPWS plans will be prepared by farm planners. Teams from all over the country have already been through a training course.

The key people in the preparation of the plan are the farmer /landowner and the planner. The planner will take account of the habitats or species present on the site and the measures needed to protect them into the future. If there is a Commonage Framework Plan or NPWS conservation plan for the site these will be used in the preparation. NPWS staff may often also have an input in preparation, and have to sign off on the plan for payment to commence.

Plan Content
A farm plan will consist of the following

- A list of lands owned/farmed, including areas
- A description of the existing environment and ecological attributes of the farm
- An assessment of their current condition
- A description of the current farming activity or activities
- A programme of actions or changes in management
- A statement of the annual costs/losses/time requirements to the farmer
- A digital photographic record of the target lands at the time the plan is written
- A short statement of the nature conservation goal of the plan

The farm plan will normally be in the form of a 5-year contract.
It is envisaged that the farmer himself may carry out work itemised in the plan at agreed rates.

The plan will normally cover only the designated area of the land. In some cases however it may be necessary to address activities on adjoining areas that exert an influence on the target area.

Eligibility
To join the scheme, the farmer

- must own (or have at least a 5 –year lease on) designated lands or commonage, or
- have legal evidence of rights over lands

The difference between this scheme and REPS
The NPWS scheme is intended to cover lands designated for nature value only, whereas REPS is a whole farm scheme. REPS includes an incentive element whereas by law the NPWS payment covers costs and losses only. However the costs may well include many positive management actions carried out by the farmer.
REPS may therefore offer a better return, but it depends on your particular circumstances.

The connection to the Single Farm Payment
The Single Farm Payment, commencing in 2005, requires the farmer to comply with the Habitats Directive and Birds Directive. An NPWS plan will lay out clearly what needs to be done. This will sort out any confusion in regard to the designation so the farmer can get on with farming. It also will simplify matters with the Department of Agriculture and Food. For example, in commonages, all shareholders are now required to adhere to the Commonage Framework Plan. An NPWS plan will help the farmer meet the standard required, and is paid for by the NPWS.

Payment Levels
These will depend on the particular situation on each farm. There are some standard rates and some payments will be based on farm accounts. .

If destocking is required, payments will be made on the loss of market value of the animals destocked, using Teagasc data for the year in question. In 2005, this is likely to be between €20 and 25. The maximum stocking rate for which compensation is allowable is 5 ewes/hectare.
In cases such as managing meadows for corncrakes, it is possible to operate a standard rate per hectare. These will be discussed and agreed with the main farming organisations.
However, in most other cases the amount payable will be calculated for the plan, as a combination of the income foregone and/or the costs of carrying out the plan. Costs can be demonstrated by receipts, but standard rates may be used. Teagasc Management Data, Department of Agriculture Farm Investment Scheme, and commercial farm relief fees may also be used.
Payment for losses will also require receipts or similar proof.

Withholding Tax Etc.
Normal tax rules apply. Where the amount payable is greater than €6,500 in one year, a Tax Clearance Certificate is required.

The Owner's Responsibilities
The farmer must comply with the plan and the scheme specifications to receive payments.
He/she must also comply with the law as laid down in Irish and EU legislation.

A farm plan is a contract and it would be expected that a farmer would stay in the contract until it expires. The farmer can however seek agreement of NPWS to join REPS if the plan has annual payments only. S/he cannot join REPS if any capital compensation has been paid.

Financial Impact of Rural Environment Protection Scheme

Liam Connolly
Head Farm Surveys Department, Teagasc, Athenry

Introduction

The 1992 CAP Reform included a provision to introduce agri-environmental programmes in the EU. In response, Ireland initiated the Rural Environmental Protection Scheme (REPS) in 1994, which contains financial incentives to improve the quality and visual appearance of the rural environment. At the beginning of 2005 there were approximately 43,000 active participants in REPS with 29% of those in REPS 3. This represents approximately one quarter of all farms but accounts for 1.4 million ha i.e. one third of all land in the country is being farmed in accordance with REPS guideline and specifications.

Adoption of the scheme has been highest in areas where farmers are mainly involved in extensive farming – Connaught, Ulster, the midland and the southwest regions. Research by Commins and Frawley (1998) have established that participants are generally those with larger than the national average farm size but in areas of low farming intensity.

Trends in Farm Income

In the Teagasc National Farm Survey (NFS), the principal measure of the income, which arises from the year's farming activities, is Family Farm Income per Farm (FFI). This is calculated by deducting all the farm costs (direct and overhead) from the value of farm gross output. FFI represents the financial reward to all members of the family, who work on the farm, for their labour, management and investment. It does not include income from non-farming sources and thus may not be equated to household income. However, where it does represent all the income of the farm family, it is expected to provide for that family's living expenses as well as being a source of future investment in the farm business.

The NFS measures farm incomes across the main farming systems and size categories except for pigs and poultry, which are excluded from the sample. Also very small farms (under 2 European Size Units (ESUs)) – are excluded from the survey. These exclusions result in the NFS survey representing 113,261 farms in 2004 compared to overall farm numbers nationally of 136,200 based on (latest figure available 2002, CSO).

Table 1 shows average Family Farm Income (FFI) per farm in current and real terms over the period 1995 to 2004. The base year 1995 was chosen, as this was the commencement of the existing sample of farms having a minimum of 2 ESUs.

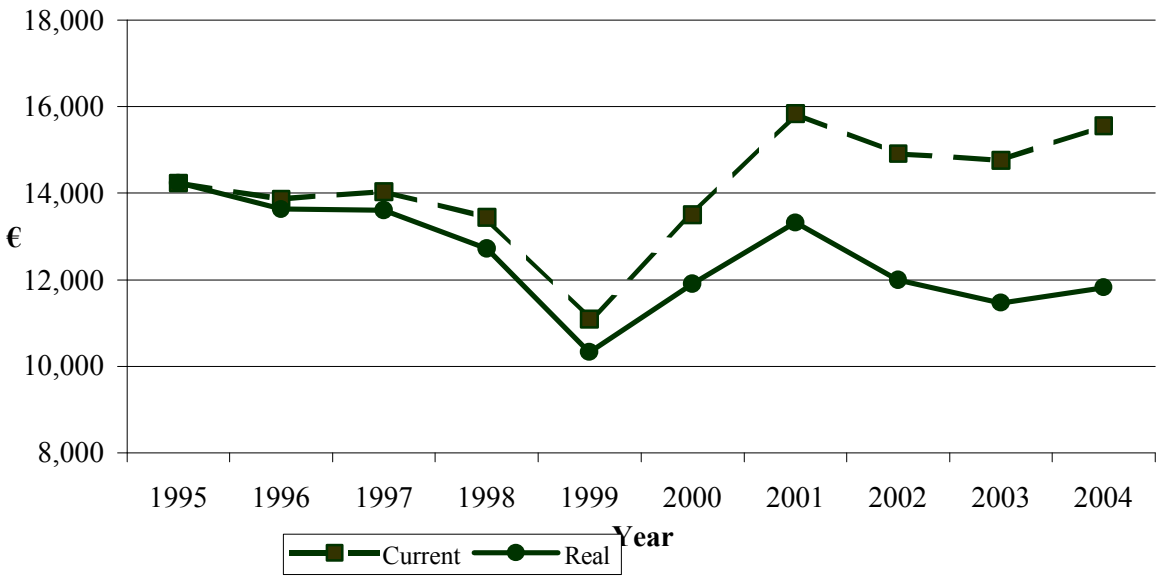
Table 1: Family Farm Income (FFI) per farm 1995-2004

	FFI (Current) €/farm	FFI (Real 1995 = 100)
1995	14,236	14,236
1996	13,866	13,634
1997	14,042	13,607
1998	13,442	12,717
1999	11,088	10,324
2000	13,499	11,903
2001	15,840	13,322
2002	14,917	11,991
2003	14,765	11,467
2004	15,557	11,822

Source: National Farm Survey, Teagasc – 2004

The data shows farm income in 2004 was 9% above that for 1995 in current terms. However when inflation (CPI) is taken into account it shows that FFI has declined from in 2004, a decline of 17% in real terms. The trend in FFI in current and real terms is shown in Fig 1. It is also worth noting that the average FFI of €15,557 in 2004 was 2% less than the FFI of €15,840 of 2001, both expressed in current terms.

Figure 1: Family Farm Income per Farm (€) 1995 - 2004



Average Family Farm Income

It is important to point out that the average national FFI figure conceals the wide range of variation that exists across the different farm systems and sizes. The data in Table 2 summarises the average levels of Family Farm Income per farm, which were achieved in 2004 across the range of farming systems.

Table 2: Family Farm Income by System Farming – 2004

Dairying	Dairy Cattle	Cattle Rearing	Cattle Other	Mainly Sheep	Mainly Tillage	All
			FFI €/Farm			
34,421	24,858	7,286	8,712	10,966	24,012	15,557

Source: National Farm Survey, Teagasc - 2004

There is considerable difference in the levels of average FFI across the farming systems. The average FFI on the Dairy and Tillage systems are far higher than those on the drystock based systems. Average farm income on the Cattle Rearing and Cattle Other Systems was €7,286 and €8,712, respectively per farm, compared to €34,421 on the Specialist Dairying System. The average FFI for the Cattle and Sheep systems is below the average agricultural wage rate of €14,581 so that those farm families do not receive a full return for their labour and no return on management or investment.

Financial Impact of REPS

REPS has been a major contributor to farm income for participating farmers and in 2004 €209m was spent supporting the scheme nationally. This paper analyses the impact on farm incomes of the REPS payment across the spectrum of farming systems and compares these data to non-participant in REPS returns. The data are based on 2004 Teagasc National Farm Survey data. Data in Table 3 shows the financial data for four groups of farm – REPS farms, extensive non-REPS farms and intensive non-REPS farms and all non-REPS farms.

Table 3: Financial performance for REPS and Non-REPS Farms – 2004

	All farms	REPS	Non-REPS		All Non-REPS
			Extensive	Intensive	
Gross Output	46,982	41,843	42,512	90,428	49,322
Total Costs	31,425	25,853	29,526	60,741	33,962
Family Farm Income	15,557	15,990	12,986	29,687	15,360
of which REPS payments	1,764	5,638	-	-	-

Source: National Farm Survey, Teagasc - 2004

Non-REPS intensive include farms not in REPS that are producing more than 170kg organic N per Ha, whilst non-REPS extensive includes farms not in REPS, producing less than 170kg organic N per Ha. Average farm income on REPS farm was approximately €3,000 higher than on non-REPS extensive mainly due to lower costs, as output was similar in both cases. REPS payment of €5,638 contributed 13% of gross output and 35% of farm income. There was little difference between the FFI on REPS farms (€15,990) and the national average of €15,557 per farm. Results from the National Farm Survey for 2004 were broadly similar to farm population data in that an estimated 31% of farms received REPS payment in 2004. The average FFI on those farms receiving REPS at €15,990 was similar to the FFI of - REPS farms.

However, there was considerable differences across farming systems with REPS cattle and sheep farms having considerably higher farm incomes than their non-REPS counterparts as shown in Table 4(a) and 4(b).

Almost 74% of farms, which participate in REPS, are in the three drystock systems, namely Cattle Rearing, Cattle Other and Mainly Sheep. As in previous years, FFI was higher on non-REPS, Specialist Dairy, Other Dairy farms and Tillage farms. On REPS cattle farms (Cattle Rearing and Cattle Other) income was higher than on non-REPS farms with the REPS payment contributing up to 75% of the difference between FFI on REPS and Non-REPS farms in these systems. In 2004 income per farm for the Mainly Sheep system was higher on REPS farms than non-REPS farms, €12,501 as opposed to €9,868, a difference of €2,633.

Table 4(a): FFI, Direct Payments/Subs for REPS farms by farming system - 2004

	Dairying	Dairying/Other	Cattle Rearing	Cattle Other	Mainly Sheep	Mainly tillage	All
FFI	31726	21651	12545	13365	12501	18219	15990
Direct Payments	14924	19605	16529	21195	18101	19176	18305
REPS Contribution	5803	6648	5348	5191	6246	5039	5638
Farm Size (Ha)	37.8	43.0	32.1	36.5	38.9	35.8	36.5

Table 4(b): FFI, Direct Payments/Subs for non-REPS farms by farming system-2004

	Dairying	Dairying/Other	Cattle Rearing	Cattle Other	Mainly Sheep	Tillage Systems	All
FFI	35158	25883	4759	6464	9868	26681	15360
Direct Payments	9547	16396	7088	10925	12810	23428	11383
Farm Size (Ha)	42.4	52.6	24.4	26.6	37.9	69.2	36.3

Source: National Farm Survey, Teagasc - 2004

REPS Farms v Non-REPS Extensive Farms

The most comparable group to REPS farms is the non-REPS extensive group. This group, which in 2004, account for 59% of all farms nationally or 68,400 farms. Data in Table 5 show some key financial variables for both groups.

Table 5: Financial indicators on REPS and non-REPS Extensive farms – 2004

	REPS	Non-REPS Extensive
FFI €/Farm	15,990	12,986
Fixed costs	13,693	14,925
- of which machinery depreciation	1,692	2,085
- building depreciation	2,325	2,074
- land maintenance	765	687
Assets – Machinery €/farm	14,424	16,541
Gross new investment €/farm	5,039	5,874
UAA ha	36.5	36.7
Total LU[s]	43.0	45.0
LU/Ha	1.18	1.22

Source: National Farm Survey, Teagasc - 2004

It is interesting to note that building depreciation and investment in buildings was higher on non-REPS extensive farms than on REPS farms – as the common perception is that REPS leads to higher investment costs. Fixed or overhead costs were higher on the non-REPS extensive farms with higher machinery depreciation but lower building depreciation and land maintenance. New investment was 17% higher on non-REPS farms in 2004. However, new investment as a percentage of farm income was high for both groups.

Table 6: Socio-economic variables on REPS and non-REPS extensive farms

	REPS	Non-REPS Extensive
Age of Holder	53	55
Married %	73	63
Demographically viable %	64	56
Off-farm job %	56	49

Source: National Farm Survey, Teagasc - 2004

REPS farmers are younger, have a higher percentage off-farm employment and are more demographically viable than their non-REPS counterparts.

REPS – Regional Analysis

The National Farm Survey analysis of the impact of REPS for 7 regions is shown in Table 7.

Table 7: REPS, FFI, Direct Payments and UAA by Region* – 2004

	Reg 1	Reg 3	Reg 4	Reg 5	Reg 6	Reg 7	Reg 8
REPS (€/Farm)	1,703	1,318	2,181	1,828	1,596	2,253	2,005
FFI (€/Farm)	9,378	20,767	16,954	20,358	24,643	21,509	8,641
REPS % FFI	18	6	13	9	6	10	23
UAA (ha)	30	50	40	40	50	41	27
REPS (€/ha)	57	26	54	46	32	55	74

Source: National Farm Survey, Teagasc - 2004

** Region 1 :- Louth, Leitrim, Sligo, Cavan, Donegal, Monaghan. 6 :- Carlow, Kilkenny, Wexford, Tipp. S.R., Waterford.*

3 :- Kildare, Meath, Wicklow. 7 :- Cork, Kerry.

4 :- Laois, Longford, Offaly, Westmeath. 8 :- Galway, Mayo, Roscommon

5 :- Clare, Limerick, Tipp. N.R.

REPS payments per farm were similar across all regions but REPS, as a percentage of FFI, showed large variation by region – ranging from 6% in Kildare, Meath and Wicklow region to 23% in the Galway, Mayo and Roscommon region. REPS payment per ha was also highest in the latter region.

Farmer's Attitude to REPS

A survey carried out in late 2004 on the National Farm Survey sample of approximately 1000 farms, asked a number of questions in relation to participation in REPS I and II and if they would join REPS III. The results of this survey are shown in Tables 8, 9 and 10.

Table 8: Joined REPS I or II

Specialist dairying	Dairying & cattle	Cattle rearing	Cattle other	Sheep	Tillage	All
			% of farms			
26	35	40	37	67	42	40

Data in Table 8 shows that 26% of specialist dairy farms in Ireland were in REPS I or II, whilst 40% of all farms in Ireland were in REPS I or II.

Table 9: Will you join REPS III?

	Specialist dairying	Dairy & cattle	Cattle rearing	Cattle other	Sheep	Tillage	All
				% of farms			
Yes	42	47	55	59	77	51	56
No	55	46	40	39	20	48	40
Don't know	3	7	5	2	3	1	4

Data in Table 9 show that in late 2004, 56% of farmers stated that they would join REPS III – this would represent 62,660 farms nationally which is a dramatic increase on the 45,200 who stated that they had joined REPS I or REPS II. A breakdown of the 62,660 farms by farm systems is shown in Table 9.

However, an estimated 45,100 farms stated that they would not join REPS III and the reasons given are shown in Table 10.

Table 10: Reasons for not joining REPS III

	Specialist dairying	Dairy & cattle	Cattle rearing	Cattle other	Sheep	Tillage	All
			% Farms				
Too restrictive	65	60	21	22	27	51	38
Investment cost	18	19	44	30	43	8	29
Age/Health	5	3	18	25	10	5	13
Other	7	10	13	17	8	31	13
Don't know	4	8	4	7	13	6	6

38% of the farmers who stated they would not join REPS felt it would be too restrictive on their farming practice – this also includes restrictive in relation to compliance with conditions of the scheme, record keeping, bureaucracy etc. An especially high % responded to this question of being too restrictive on the more intensive farm systems i.e. dairying and the mainly tillage systems. The main inhibitor to participation in the scheme on cattle and sheep farms was the extra investment cost involved. This survey is being repeated in October/November 2005, and it will be interesting to see if farmers have actually proceeded or implemented their planning intentions of the previous year, as discussed above. It should also indicate and provide information on the impact of the Single Farm Payment on farmer's attitude to REPS.

High Nature Value farmland – an emerging policy area

Dr. Liam Lysaght, Wildlife Officer, The Heritage Council.

Most of the attention to date in relation to agriculture and nature conservation has focussed on mitigating the negative impact of intensive agricultural production on wildlife. This is not just an Irish phenomenon, but has largely driven the debate and policy development at the European level. The issues here are very real ones, and are being addressed to a certain extent through existing policy interventions.

At the other end of the spectrum there are extensive areas of the European Union where farmland is still managed in a way that works with nature and the landscape. In these areas, the link between agricultural activity and nature conservation is not only a positive one, but the very survival of the nature conservation interest of these areas is dependent upon the continuation of generally long established extensive farming practices. This is what is referred to as High Nature Value (HNV) farmland.

High Nature Value farmland occupies somewhere between 15 and 25 % of the former EU 15 member states, mostly in southern Europe and in the north-western Atlantic fringe. With the accession of the 10 new member states to the EU from Central and Eastern Europe, the area of HNV farmland in the EU has increased significantly.

The types of High Nature Value farmland found across Europe vary considerably, from region to region. Nevertheless there are some features that appear to be common to High Nature Value farmland. These common features include:

- Farm operations that have their roots in management systems that used regional breeds of livestock;
- Drawing upon local skills that complement the climate and geography of the locality;
- Using little artificial fertiliser or chemicals;
- Often having small scale cultivation as part of the livestock production system, and
- Using labour-intensive management practices, such as shepherdry and transhumance, to make the most of natural pastures and meadows.

Some of the classic examples of High Nature Value farmland in Europe are the crofting system of Scotland, the grazed Dehesa woodlands of Spain, the open grassland Steppes of Hungary, the dairy systems of the Alps and the mixed farming of the Carparthians. These landscapes support a very rich biodiversity, and maintain some of Europe's most threatened habitats and species. As a consequence of this, a considerable amount of the land designated for special conservation under the EU Habitats Directive (SACs) and the Birds Directive (SPAs) is in fact High Nature Value farmland.

But while the classic or better examples of High Nature Value farmland are easily recognised, there are many other regions of Europe and farming systems that provide many benefits for nature conservation, yet these benefits are poorly understood and rarely recognised. Much of the land supporting relatively extensive livestock systems of the uplands and western parts of Ireland could be considered High Nature Value farmland, so the relevance of this to Irish agriculture and nature conservation is potentially very significant. High Nature Value farmland is an emerging policy area,

now recognised in the EU Rural Development regulation. Also, the European environment ministers have given a commitment to complete the identification of all High Nature Value farmland by 2006 and to introduce measures to support a significant proportion of this by 2008.

Initial work on identifying High Nature Value farmland has been undertaken by the European Environmental Agency. This study proposed that there were three overall High Nature Value farmland types, all of which are to be found in Ireland.

Type 1 was farmland dominated by semi-natural vegetation. Irish examples of this would include the Burren farmland, commonages of the blanket bogs, coastal grassland and machair of the north-west.

Type 2 is a less well defined type of farmland, that is characterised by a mosaic of small-scale features of heritage value – for example hedgerows, patches of scrub, remnant areas of semi-natural vegetation, in particular species rich grasslands, ponds, ditches and streams, stone walls etc. Although this could apply to most of the hedgerow landscape of the Irish countryside, an added criterion in the Irish context would require that the production portion of the farm would be farmed at low-intensity. Most of the lowland farmland west of the Shannon and patches of the poorer land in the east could be considered examples of type 2 High Nature Value farmland.

Type 3 is farmland that is important for a small number of rare or threatened species, but otherwise is of low intrinsic nature value, both in terms of species and habitat diversity. Farmland supporting populations of wildfowl on intensively managed land such as at the Wexford Slobs is an example of this type of High Nature Value farmland.

The Heritage Council is actively working to promote the concept of High Nature Value farmland as a policy instrument around which financial supports could be structured. Thoughtfully crafted programmes and measures to support High Nature Value farmland in Ireland would be of enormous benefit to Ireland's biological diversity. It would also provide the justification for continuing to support the extensive and largely uneconomic farming systems of marginal areas, which in turn would assist maintenance of the socio-economic fabric of rural communities.

BurrenLIFE: Farming for conservation in the Burren.

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1. Background

The Burren – found between north Clare and south Galway - is a very special place. It is unique, unlike anywhere else. Not only is it considered to be one of Ireland's most beautiful landscapes; it is also one of the most interesting. Composed mainly of exposed limestone (the name originated as *Boireann*, meaning place of stone), it contains a range of very interesting geological features: Ireland's largest network of caves, disappearing lakes known as turloughs, and some of the best limestone pavements anywhere in the world. The Burren is equally renowned for its monuments – from megalithic tombs to massive stone forts - a remarkable legacy in stone, tracing the evolution of farming society on this rocky outpost for six thousand years. But the Burren is probably most famous for its flora and fauna – three quarters of all of Ireland's native flowers are found here, including most of Ireland's orchid species.

Because the Burren is so special, most of it is now protected as a 'Special Area of Conservation' or SAC. But protecting the Burren is not so easy. Simply put, most of what we value about the Burren – and the Irish landscape in general - is the result of thousands of years of farming activity. So if we want to protect this landscape, the best way is to continue farming. There is a problem however. The number of Burren farmers has halved over the past three decades, while old traditions such as the grazing of the hills in winter (key to the region's rich flora) are being lost in favour of more productive and convenient solutions. The rate and scale of change in Burren farming has resulted in many heritage-rich grasslands being under grazed, so flowers and even monuments are losing out to tough grasses and scrub. While REPS has certainly helped to support environmentally friendly farming in the Burren, REPS alone cannot be expected to address some of these threats.

One solution to this dilemma may be provided by a new EU LIFE Nature funded project. Launched this past summer by Environment Minister Dick Roche, the 2.3m euro, 5 year project titled 'Farming for Conservation in the Burren' is a unique partnership between the National Parks and Wildlife Service (formerly Duchas), Teagasc and the farmers of the Burren, as represented by Burren IFA.

2. Objectives of the BurrenLIFE Project

The objective of this project is to develop a blueprint for sustainable farming in this unique landscape, one that meets the needs of the special environment and of the farmers who manage it. To achieve this, an ambitious work programme has been developed and approved by the European Commission for EU LIFE Nature Funding. A range of diverse but complimentary Project Actions (Table 1) have been developed, including:

- Implementing best-known management practices on 2,000ha of the Burren, including new feeding systems, redeployment of existing livestock and targeted scrub removal.
- Increasing understanding of the relationship between land management practices and the natural heritage of the Burren.
- Developing new support mechanisms for the sustainable management of the Burren habitats through research and advisory services, marketing initiatives, co-operative structures and the revision of existing agri-environmental schemes.
- Enhancing awareness and skills relating to the heritage of the Burren and its management through a range of practical initiatives aimed at empowering local communities.
- Disseminating information relating to the agricultural management of areas of high nature and cultural conservation value in Europe through literature and the media.

3. BurrenLIFE Approach

The project team are adopting a novel approach to this challenging task: asking farmers how they would address the threats that face the Burren, supporting these farmers to try out these and other solutions on their farms, and then closely monitoring the impacts to see how effective these changes have proven to be. Building on the practical knowledge, experience and skills of these farmers, Teagasc are also bringing their technical expertise to bear on the situation: new systems of feeding, grazing and breeds are being looked at – though this time not solely for their production value, but also for their value in conserving the Burren's rich heritage.

This 'back to basics' ground-up approach is being implemented on a select number of 'Burren LIFE' monitor farms in the coming years, with a 'LIFE plan' being compiled to cater for the unique situation that exists on each and every farm.

3.1 Public Consultation and Farm Visits

In March and April 2005, the Project Team held a series of public meetings with Burren farmers to discuss the new Project. The meetings were targeted at those engaged in farming in the Burren to give them an opportunity to learn more about the Project from the Project Team and from the National Parks and Wildlife Service (Project Beneficiary), Teagasc and Burren Irish Farmers Association (Project Partners). In total over 150 farmers attended the public meetings. Based on the success of these public meetings the Project Team were immediately in a position to move forward to direct farm visits.

Farm visits and environmental baseline surveys began in May 2005. Farm visits are informal in nature, and provide an important opportunity for the Project Team to witness the diversity of systems, opinions and ideas that exist in the region. Visits also

allow the farmer to learn more about the purpose and objectives of the Project and how he / she might contribute to it, either as a monitor farm, or just in terms of suggestions as to what might be done. Visits began with the implementation of a farm-scoping questionnaire. This was developed by the Project Team and used to undertake the initial scanning on the first batch of farms. It was designed to establish basic facts regarding the prevailing farm system. Over 50 farms have been visited so far (Map 1).

3.2 Selection of BurrenLIFE Monitor Farms

Basic criteria for selection of BurrenLIFE monitor farms included (a) land located within targeted SACs, (b) farmer expression of interest in participation in project, (c) possibility of proposed project action having positive effects on priority habitats (habitats listed in Annex 1 of EU Habitats Directive as priority for conservation), and (d) minimum area of priority habitat.

Following this, a habitat condition assessment was conducted on the SAC areas present on all sites deemed eligible for inclusion, using a standard assessment form. Where possible the land was walked with the farmer. Both the habitat condition assessment data and the farm scoping questionnaire data were used to develop selection criteria for monitor farms which, when applied, allowed for the rating of farms visited in terms of their suitability for project involvement.

Using this process, a total of 12 farmers were short listed as monitor farms (August 2005) (Map 1). The 12 monitor farms contain approximately 1,300 hectares of designated SAC. These farmers were all revisited to explain the implications of project involvement and to give them the opportunity to suggest possible management changes. In addition to these 12 monitor farmers, additional farms will be selected in the coming months. In total project actions will be implemented on a minimum of 2,000 hectares of SAC land.

3.3 BurrenLIFE Farm Planning

Whole farm plans were compiled for these 12 farms detailing the proposed work for the coming years. These plans have some interesting features (Fig. 1): designed for easy access, they contain information and images on the heritage value of the farm – basically describing what it is the farmer needs to protect and why. Based on a system of mutual trust and understanding, the plans are also careful to allow the farmer the flexibility to adapt his/her plan to unforeseen circumstances – to react perhaps to changing weather, market or labour conditions, as would have been the case traditionally.

4. Future Outlook

It is envisaged that the ongoing findings of this project will inform the development of existing and future agri-environmental schemes such as REPS both in the Burren and elsewhere. In addition, it is hoped that the experience gained through this work by the Project Partners will act as the blueprint for the development of new initiatives to support farmers in other parts of the country, where good farming practice is essential to the maintenance of high nature value areas shaped by thousands of years of farming. The years ahead will determine how successful this novel approach proves to

be: the future of one of Ireland's most valuable landscapes could well depend on its success.

Table 1: Full list of BurrenLIFE Project Actions

A. Preparatory actions, elaboration of management plans and/or of action plans

ACTION A.1: Compilation of Burren Land Use database
ACTION A.2: Site selection and farmer liaison
ACTION A.3: Baseline Farm Survey
ACTION A.4: Drawing up Farm Management Plans and Contracts

C. Non-recurring management

ACTION C.1: Restore damaged areas
ACTION C.2: Enhance livestock management facilities on Project Sites
ACTION C.3: Scrub removal
ACTION C.4: Implement new grazing regimes on priority habitats through stock redeployment on a site-by-site basis
ACTION C.5: Introduce new supplementary feeding systems
ACTION C.6: Conduct study on potential for developing new markets for Burren produce
ACTION C.7: Revision of existing agri-environment schemes

D. Recurring management

ACTION D.1: Profiling of Agricultural Capacity of Burren Grasslands
ACTION D.2: Formulation of appropriate supplementary feedstuff rations
ACTION D.3: Purchase and distribution of concentrate feedstuff to farmers
ACTION D.4: Advisory, Compliance, Assessment and Information sharing visits
ACTION D.5: Review and repair livestock management facilities
ACTION D.6: Repeated scrub control assessments and re-treatments
ACTION D.7: Development of a Burren Agri-Environmental Co-operative
ACTION D.8: Annual payment to Burren farmers for project participation, herding of livestock and other works

E. Public awareness and dissemination of results

ACTION E1: Initiate lines of communication with similar EU regions/Projects
ACTION E.2: Website Development – www.burrenbeo.com/LIFE
ACTION E.3: Media Campaign
ACTION E.4: Educational Programme including Public Information meetings
ACTION E.5: Demonstration Farms
ACTION E.6: Conferences, seminars and workshops
ACTION E.7: Project Reporting
ACTION E.8: Publications and presentations
ACTION E.9: Information Fact Sheets and promotional material

F. Overall project operation and monitoring

ACTION F.1: Establishment and operation of Project Advisory Group
ACTION F.2: Establishment of Project Headquarters
ACTION F.3: Employment of Project Team
ACTION F.4: Ongoing Environmental Surveys
ACTION F.5: Ongoing Agricultural Surveys
ACTION F.6: Ongoing Socio-economic Surveys
ACTION F.7: Collation of Project information on GIS database
ACTION F.8: Financial Management
ACTION F.9: Independent audit

BurrenLIFE

Farm Plan

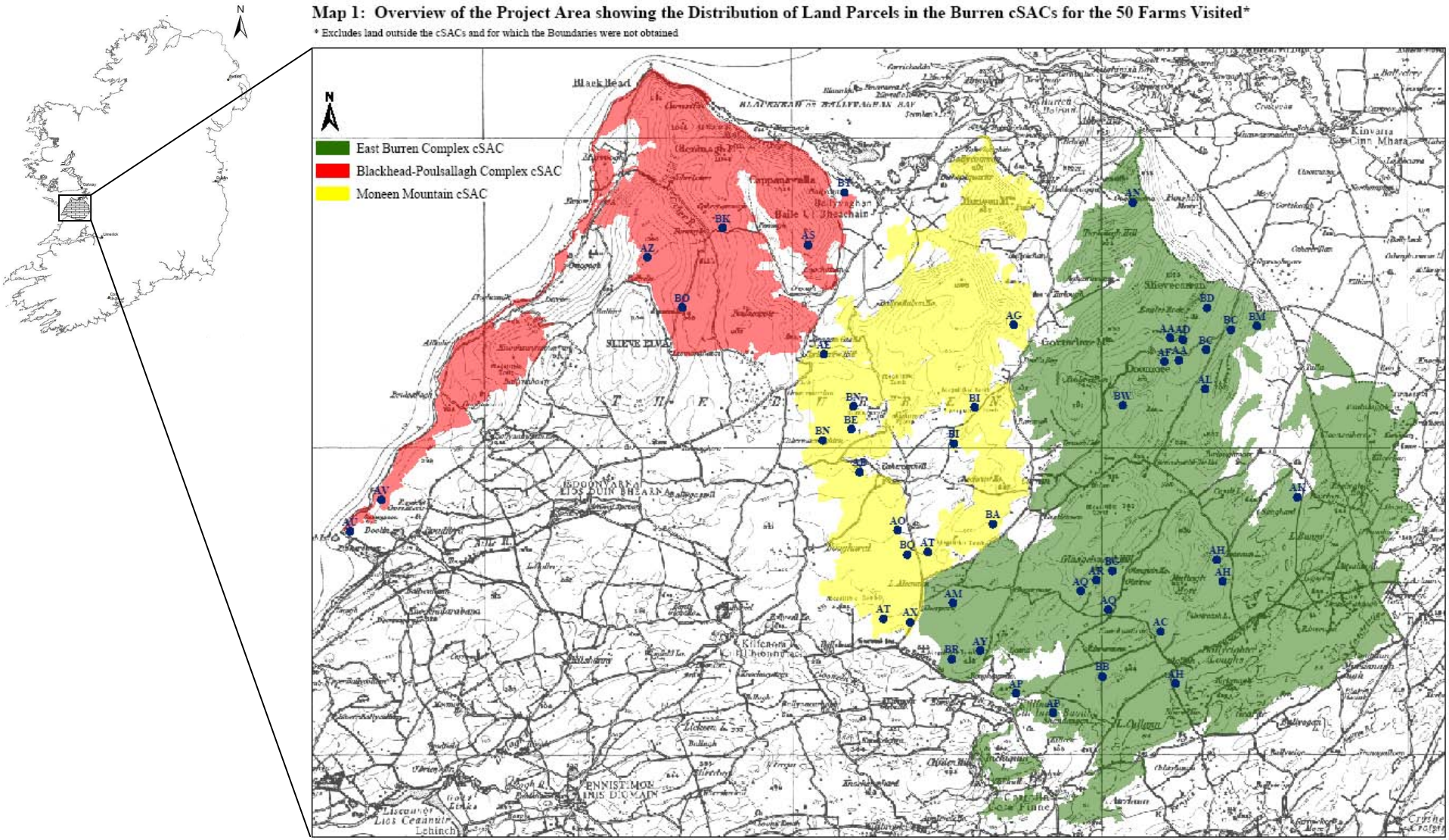
LIFE Plan

For:

John Smith,
Burren,
Co. Clare.

Table of Contents

Fig. 1: Example of BurrenLIFE Farm Plan Table of Contents.



Map 1: Overview of the Project Area showing the Distribution of Land Parcels in the Burren cSACs for the 50 Farms Visited*

* Excludes land outside the cSACs and for which the Boundaries were not obtained

Sites are subject to revision. Data valid 28 July 2004.

Maximising the Biodiversity Impacts of REPS

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Introduction

National and European agricultural policy is increasingly required to incorporate environmental considerations. In order to maintain an edge in an increasingly competitive global market, Ireland's agricultural sector needs to demonstrate that it can deliver these environmental measures effectively. A carefully targeted and financially incentivised agri-environment scheme is an essential tool for such delivery. This project, Maximising the Biodiversity Impacts of REPS, aims to develop an ecological monitoring methodology for REPS (using birds as indicators), use such methods to determine the current impact that REPS is having on biodiversity and offer research-based recommendations to improve REPS as a tool for promoting biodiversity in the wider countryside. If REPS can be shown to be delivering its objectives, or is flexible enough to improve and maximise opportunities to deliver its objectives, then it will be easier to justify and secure future funding which, in turn, will benefit both Irish agriculture and Ireland's natural environment.

Farmland Birds in Ireland

With so much of our land area dedicated to agriculture, it is not surprising that much of Ireland's natural heritage is dependant on farmland. Of the eighteen red-listed birds of conservation concern[i], over half are farmland species. As agriculture has changed over recent decades, many of these once common species, such as Yellowhammer, Corncrake and Skylark have become increasingly threatened. The diversity of flora and fauna on agricultural land may be more at risk than those in any other habitat in Europe[ii]. Over the last forty years there have been declines in the abundance and distribution of a wide range of farmland plants and invertebrates, especially on arable land[iii, iv]. Similar declines are clearly illustrated by the farmland bird fauna[v]. Seed-eating farmland birds, mainly finches and buntings, appear to have been particularly hard hit, with severe declines in range and abundance in Britain and Europe over the last 30 years[vi, vii, viii, ix]. A recent review[x] examined the probable extinction of the Corn Bunting in Ireland and concluded that the post-1960s Corn Bunting declines were probably influenced by reductions in crop diversity due to farm specialisation, declines in the area of spring cereals and over-winter stubbles, loss of hedgerows and other non-crop habitats, the switch from hay to silage and increased use of fertilisers and pesticides. Other seed-eating farmland birds, mainly finches and buntings, have also seen large population declines.

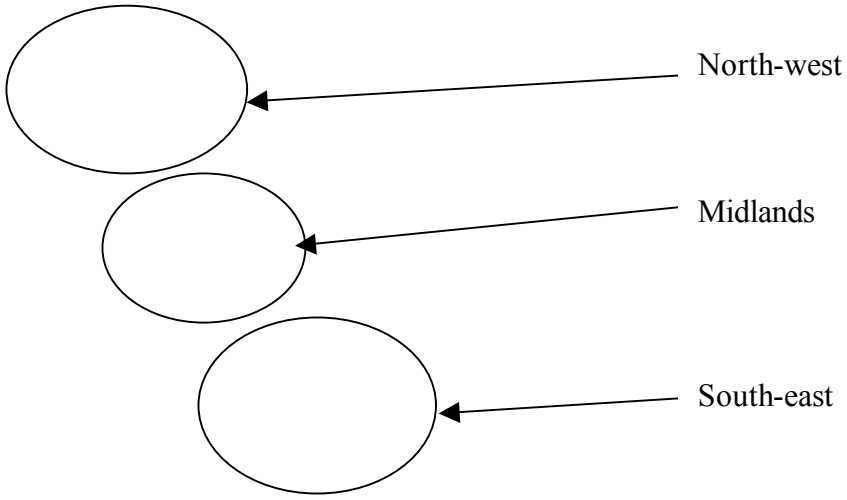
Site Selection

Fieldwork for this project was undertaken in three geographical locations in Ireland (see Figure 1): the North-west (Co. Leitrim, Co. Sligo and north-east Co. Mayo), the Midlands (Co Offaly, North Tipperary and east Co. Galway) and the South East (Co.

Wexford, Co. Waterford and Co. Kilkenny). Survey sites were paired REPS: non-REPS. Each pair was matched for location (within five miles of each other), enterprise and size. The selection of individual farms has mainly relied upon liaison work with local agricultural and REPS planners in these counties. Sites selected using these contacts may lead to bias in the sample of farms selected (e.g., in one county the contact is a Dairy Advisor, thus many of the sites selected were dairy farms). In many cases, once a suitable survey farm was identified, the farmers themselves were often able to suggest suitable 'pair' farms to be surveyed with theirs.

In order to ensure that sites being surveyed for this project are representative of farming in the geographical areas selected for fieldwork, the relevant agricultural statistics for the counties involved were extracted from the 2002 Census of Irish Agriculture and compared with the sample of farms surveyed in the first two year of fieldwork. The intention of this was to enable a more informed choice on the selection of sites in 2005, the final fieldwork season, to maximise the representativeness of the farms studied.

Figure 1: Geographical location of study sites



Figures 2-4 compare the percentage of farm types from the national agricultural statistics with those of the selected study sites. The national statistics are prepared on a county-by-county level, and differ from the geographical fieldwork areas. To accommodate this, the statistics from Co. Leitrim, Co. Mayo and Co. Sligo were compared to the North-west fieldwork area and Co. Offaly and Tipperary North to the Midlands fieldwork area (National and survey figures were com
east counties selected).

Figure 2: North-west

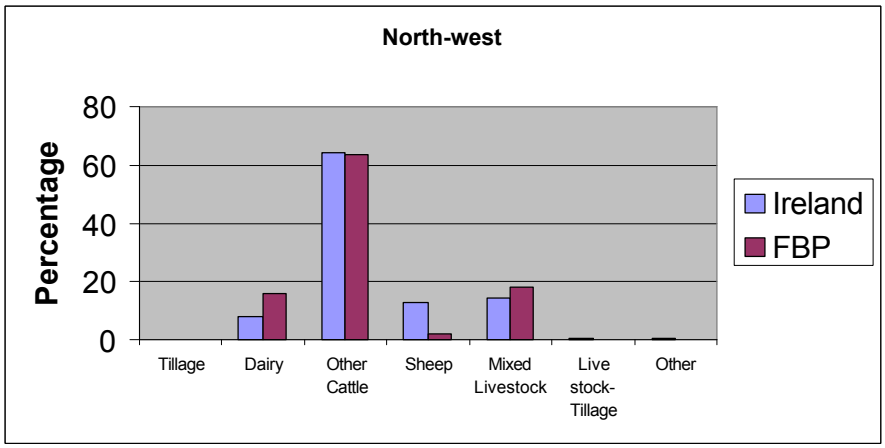


Figure 3: Midlands

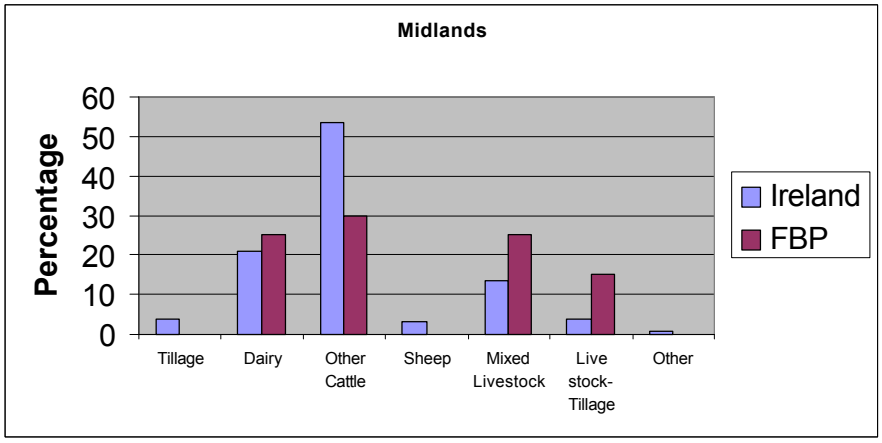


Figure 4: South-east

It should be noted that the methodology behind the allocation of farm enterprise type differs between the Census of Irish Agriculture and the Farmland Birds Project. The Census basis its farm type classification on the EU Farm Typology Classification System. This system looks at the economic value of each on-farm enterprise, and

categorises the farm type into a defined type. For the Farmland Bird Project, the main interest is in the habitat and land use present on a farm. Therefore, the enterprise type depends upon what is present on the farm, largely irrespective of operating scale. For example, the Census might consider a farm with 20 dairy cows and 20 sheep as a dairy farm, but the FBP would consider this to be a mixed livestock farm.

This difference in approach may explain several of the differences between the two data sets in Figures 2-4. The two North-west datasets appear to correspond well. The major deviation is an over-representation of dairy farms (due to one of the contacts being a dairy advisor), and the under-representation of sheep farms in the FBP dataset. The lack of sheep sites is due to the nature of sheep farming in the north-west, which is often on upland commonages (which could not be surveyed), and the focus of the FBP on lowland areas (thus missing other upland sheep farms).

The under-representation of other cattle farms in the Midlands, and over-representation of mixed livestock farms is almost certainly due to the differing methodologies used to categorise farm types. In the Midlands and South-east, there is an over-representation of Livestock-tillage farms and an under-representation of tillage farms. This may be due to the differing approaches used to categorise farm types, although it may also be due to the large number of tillage farms that were surveyed in the first two seasons of fieldwork (no tillage areas were surveyed in the final season to attempt to redress this bias).

Fieldwork Methodology

Fieldwork was undertaken in the summer (or breeding) seasons of 2003, 2004 & 2005 and the winter seasons of 03-04 and 04-05. The bird communities on farmland in both seasons are very different, and the analysis for each season is undertaken separately. However, the fieldwork methods for both seasons were the same. The summer fieldwork season covers the months of April, May and June; the winter fieldwork season runs from mid-November to mid-February.

There are two components to fieldwork, bird surveying and habitat recording. On some larger farms (typically over 30 hectares) it was often not possible to bird survey the whole farm within the allotted time. In such cases, a preliminary habitat survey was conducted prior to the bird survey, to identify and prioritise patches where bird survey work should be conducted.

<u>Survey Area</u>

Since farms are generally large and complex habitats, they needed to be broken down into smaller units that allowed a description of habitat to be made. These smaller units were termed *patches*. Typically, a patch was a discrete habitat unit, usually enclosed by a *boundary*. The boundary may include several habitat features, such as a hedge, watercourse or grassy margin. The remainder of the patch was termed the *interior*. The boundary will be subdivided into boundary units depending upon the structure of the habitat. Typically a patch is the equivalent of a single, enclosed field. The farmyard was also considered as a separate patch.

Identifying some patches was difficult. In certain circumstances, fields were split into two (or more) separate patches to permit accurate habitat recording (e.g. if a single field had one area of dry grassland and another area of wet, rushy pasture, it would be

divided in to two 'patches'). Some patches may contain smaller patches: a fenced quarry within a field, for example, was treated as a separate patch

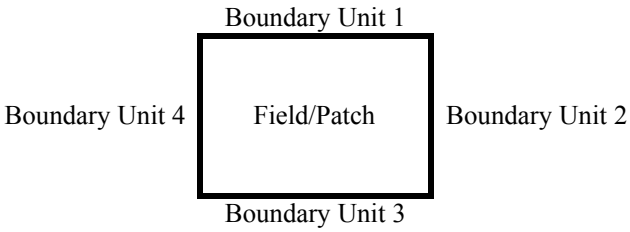
All areas of grant-aided forestry were excluded, although small, non-commercial farm woodlands were included. Similarly, small quarries on the farm were included but any commercial quarries excluded. Also, private houses or gardens were not surveyed. Any land designated for its biodiversity interest (SAC, SPA or NHA) and any land not exclusively managed by the farmer (e.g. commonage) were also excluded. The minimum total site size for survey was 10 hectares. REPS farms had to have participated in the scheme for at least one year; non_REPS farms could never have been in the scheme.

Habitat Recording

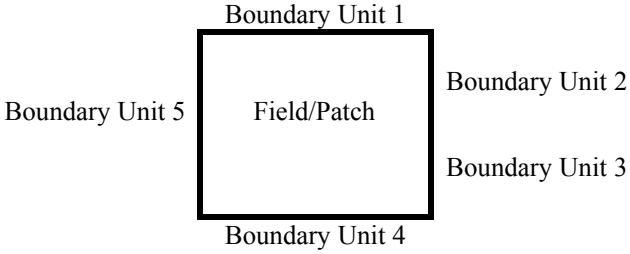
Habitat recording was carried in two stages: Interior habitats and boundary habitats.

Interior habitat recording was done on a patch-by-patch basis. The interior habitat corresponds to what is found in the majority of the patch. Typically this is the crop, but may be a farmyard or quarry. Each patch will have one interior habitat unit (e.g. a grass field) and may have one or more additional habitat features (e.g. Mature trees, areas of poached ground, etc.).

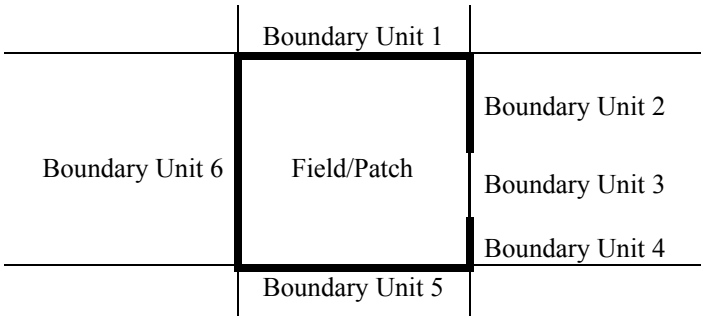
A boundary habitat unit is a length of continuous habitat. The end of a boundary unit will occur where the habitat changes or where an intersection from another boundary meets it. It is perhaps best to imagine a grid, where each square would have four boundary units:



If an extra boundary intersection is present, the number of boundary units will increase:



If the boundary had a gap greater than five metres in width, then this was treated as a separate boundary unit. In the example below, the thick black line represents a hedge, the dotted black line represents a wire fence at a gap in the hedge:



When surveying boundaries, all features (hedges, ditches, walls, fences, etc.) on the boundary were recorded. Also recorded were the habitat types on either side of the boundary (i.e. the habitat in the fields the boundary divides).

For both interior and boundary habitat recording, habitat codes were used and entered onto a data sheet. With the exception of boundary length, and the area and stock present for interior habitats, all data were recorded as discrete variables (i.e. no continuous measurements of, for example, grass height or hedge width, were made in-field; instead, such measurements were assigned to classes of size, density, etc.). This was done to speed up the habitat recording.

Bird Surveys

Bird surveys started as close to dawn as conditions would permit (in winter, early morning fog would delay the start of fieldwork). Irrespective of farm size, a time limit of four (exceptionally five) hours was permitted for birds surveys to be carried out. Fieldworkers surveyed only continuous farm areas (i.e. not separate, unconnected fields), and that, in instances where only part of the farm was being surveyed, these areas should be representative of the farm as a whole (for example, if the farm was a mixture of cattle and tillage, this mixture should be reflected in the area surveyed). Bird surveys were carried out (where weather and time permitted) twice during a season. For second surveys, the same land as the early visit were covered.

For each patch, fieldworkers walked around the boundary recording all birds seen and heard onto a map of the farm. In some situations this could involve walking along both sides of the same boundary. For boundaries with little cover where both sides can be easily seen, surveying could be done from one side. However, for boundaries where there is good cover, or tall or thick vegetation in the margin, both sides were walked. In large patches, where the centre cannot be adequately surveyed from the boundary, or in patches with tall or thick vegetation (such as stubbles, woodland, tall grass or cereals, etc.), internal transects were walked to record any birds that might be present in the centre.

Only birds actively using the patch were recorded. For birds in flight, only those actively feeding over the patch (eg birds of prey or hirundines) or birds that are

displaying (eg skylarks) were recorded; if a bird is flying over the patch, but not interacting with the habitat, it was ignored. The position of birds were marked on the map as accurately as possible, with birds on the boundary or interior habitats clearly marked. In the case of flying birds, the habitat unit they were interacting most closely with (a swallow may fly along a hedgerow, while a skylark may sing above the centre of a field) was noted. Due to the importance of relating birds to habitat, every effort was made to see what habitat the birds are using.

Data Collation

After fieldwork, bird data were entered onto a recording sheet, associating each bird with a particular habitat unit (boundary or patch interior).

Farm Management Data

In addition to the bird and habitat data, farmers were interviewed and data collected relating to management (past and present), fertiliser use and their opinions on REPS.

Results

At present, data entry is nearing completion and substantial analysis work remains to be undertaken Such further output as is available in time for the REPS conference will be presented there.. However, some preliminary results are available, primarily from the winter habitat datasets. *()*

Sites surveyed

A total of 122 farms were visited during the summer season, and 82 during the winter. Table 1 shows the number of farms surveyed in the winter during the course of the project, broken down by region, season in which fieldwork took place and by REPS participation (e.g. in the north-west in the first season of winter fieldwork (03-04), 6 REPS and 6 non-REPS farms were surveyed). Since sites were surveyed as pairs, the ratio of REPS:non-REPS farms in each category will always be 1:1

Table 1: Number of farms surveyed during winter fieldwork

Region	**North-west**			**Midlands**			**South-east**			**All Regions**		
Season	03-04	04-05	Total	03-04	04-05	Total	03-04	04-05	Total	03-04	04-05	Total
REPS	6	8	14	7	7	14	7	6	13	20	21	41
Non-REPS	6	8	14	7	7	14	7	6	13	20	21	41
Total	12	16	28	14	14	28	14	12	26	40	42	82

Table 2 shows the area of land surveyed for the farms listed in Table 1 (e.g. in the north-west in the first season of winter fieldwork (03-04), 163.68 hectares of land on REPS farms and 150.47 ha of land on non-REPS farms were surveyed).

Table 2: Area of land surveyed (ha) during winter fieldwork

Region	**North-west**			**Midlands**			**South-east**			**All Regions**		
Year	03-04	04-05	Total	03-04	04-05	Total	03-04	04-05	Total	03-04	04-05	Total
REPS	163.68	155.88	319.56	176.75	224.45	401.20	216.18	183.07	399.25	556.61	563.40	1,120.0
Non-REPS	150.47	136.22	286.69	200.03	203.03	403.06	199.80	168.70	368.50	550.30	507.95	1,058.2
Total	313.15	291.10	606.25	375.78	426.48	804.26	414.98	350.77	767.75	1105.9	1070.3	2178.26

It should be noted that the figures in Table 2 refer to the area of land surveyed, not the area of the whole farm. Depending upon the farm, the maximum area that could be surveyed in the allotted time was typically 30-40 hectares, thus 12 farms in the South-east could not be completely surveyed, compared to two in the Midlands. All farms in the North-west were completely surveyed. As expected, farm size in the North-west is smallest, with those in the South-east largest and the Midlands somewhere in between. The difference in size between the size of survey sites between areas is statistically significant ($F_{2,79}$=7.39; P<0.001), and this difference was accounted for by South-east farms being bigger than those in the North-west (Tukey P<0.05).

Interior Habitat Composition

Table 3 shows the composition of interior habitats (displayed as a percentage of the total area, e.g. 33.25% of North-west REPS farms were improved grassland). These data show clear differences in habitat composition between regions (again as expected – farms were selected to reflect regional farms enterprises in that locality).

Table 3: Habitat composition (%) of patch interiors surveyed during winter

	Habitat Type	North-west	Midlands	South-east	Total
REPS	Improved Grassland	33.25	80.20	75.74	65.22
	Semi-improved Grassland	42.88	5.22	2.69	15.06
	Unimproved Grassland	16.94	0	0	4.83
	Winter cereal	0	0	0.75	0.27
	Cereal Stubble	0	9.16	16.98	9.34
	Other Stubble	0	0	0.80	0.29
	Set-aside	0	0	0	0
	Bare / tilled soil	0.10	0.71	0.98	0.63
	Farmyards / buildings / roads	1.21	0.94	1.49	1.21
	Woods / scrub / trees	2.55	1.91	0.48	1.58
	Ponds / watercourses	0.04	0.13	0.03	0.07
	Rough vegetation	3.03	1.73	0.06	1.50
Non-REPS	Improved Grassland	24.84	84.19	76.14	65.31
	Semi-improved Grassland	47.56	2.74	1.79	14.55
	Unimproved Grassland	21.08	0	0.38	5.84
	Winter cereal	0	0	0	0
	Cereal Stubble	0	6.21	12.75	6.81
	Other Stubble	0	0.30	1.09	0.49
	Set-aside	0	0	0.72	0.25
	Bare / tilled soil	0.51	4.25	3.80	3.08
	Farmyards / buildings / roads	1.36	1.03	1.81	1.39
	Woods / scrub / trees	3.35	0.67	1.08	1.54
	Ponds/watercourses	0.09	0.01	0	0.03
	Rough vegetation	1.21	0.60	0.44	0.71

One of the main considerations with these data is whether there is a difference between the habitat composition on REPS and non-REPS farms. In particular, it might be expected to see a greater area of 'habitats' (represented by the last three rows) on REPS farms. Although some differences clearly exist (e.g., the proportion of rough vegetation on non-REPS farms is less than half that present on REPS farms), no statistically significant differences between the habitat composition could be detected, either in each region or with pooled data.

Boundary Habitat Data

Table 4 shows the total length of boundaries surveyed during winter fieldwork, divided by region, fieldwork year and REPS participation.

Table 4: Length (m) of boundary habitats surveyed during winter fieldwork

Region	**North-west**			**Midlands**			**South-east**			**All Regions**		
Season	03-04	04-05	Total	03-04	04-05	Total	03-04	04-05	Total	03-04	04-05	Total
REPS	42,050	40,060	82,110	38,625	46,225	84,880	43,110	35,155	78,265	123,785	121,440	245,22
Non-REPS	26,010	36,530	62,540	39,175	38,560	77,735	39,235	37,005	76,240	104,420	112,095	216,51
Total	68,059	76589	144,650	77,799	84,784	162,615	82,344	72,159	154,505	228204	233,534	461,74

Table 5 shows the density of the boundary habitat types recorded on farms surveyed during winter fieldwork. The data is shown as 'metres of that boundary habitat type per hectare of farm surveyed'. Adopting this convention allows comparison between the different regions, where land area surveyed was not the same. It should also be noted that one boundary may comprise several different habitat features (a hedgerow may have a ditch on one side, a grass strip on the other and two fence lines).

Table 5: Density of Boundary Habitat features (m/ha) of boundaries surveyed

	Habitat Type	**North-west**	**Midlands**	**South-east**	**Total**
REPS	Hedgerow	203.98	151.02	173.06	173.99
	Road / track	11.20	19.04	20.41	17.29
	Bare soil	7.53	4.66	0.35	3.94
	Fence	142.10	187.06	135.90	156.00
	Wall	55.40	12.65	6.41	22.62
	Bank	87.68	22.36	21.63	40.74
	Grass (vegetated) strip	38.01	29.37	92.25	54.25
	Drain / watercourse	93.91	70.43	43.82	67.64
Non-REPS	Hedgerow	168.32	129.40	173.96	155.46
	Road / track	12.17	17.78	29.13	20.21
	Bare soil	2.84	9.66	0.07	4.47
	Fence	115.28	164.88	123.61	137.07
	Wall	33.63	20.83	6.28	19.23
	Bank	70.56	30.53	34.53	42.77
	Grass (vegetated) strip	22.93	26.47	70.85	40.97
	Drain / watercourse	59.28	53.86	47.68	53.18

Again, and although there is a greater density of hedgerows, fences and watercourses on REPS farms, the difference for regional and pooled data is not statistically significant.

Discussion

It is perhaps disappointing that no significant differences between the REPS and non-REPS habitat data have been found. However, it is not surprising. The fieldwork for this project was undertaken between 2003 and 2005, prior to the introduction of REPS 3. The predecessors to REPS 3 required farmers to 'maintain' or 'retain' habitats. The data suggests that this has probably been successful. The loss of such habitats from non-REPS farms, however, has not been sufficient to make a significant difference. It is encouraging that REPS 3 introduced the management and creation of habitats. Such action is likely to increase differences in habitat occurrence between REPS and non-REPS farms and could, over time, result in significantly better habitats on REPS farms. A critical point here is the timeframe for such improvement.

Another consideration is that the data evaluated here is only at a very basic level: presence or absence of broad habitat groups. It is possible that management on REPS farms may yield a higher quality (if not quantity) of such habitat. The habitat dataset for this project is huge, and as yet has not been fully explored. It is possible that further analysis of the data will be able to evaluate the quality of the broad-scale habitat groupings considered here. Similarly, no evaluation of the bird data has been presented here (it is hoped that some of this data will be ready for the conference). Again, the bird data may show that certain habitats on REPS farms are of higher quality (in terms of bird densities) than their non-REPS counterparts (of course, the reverse may also be true!).

It should be noted that the principal aim of this project is not to show whether REPS has been an effective tool at conserving biodiversity in the wider countryside; rather the main aim is to maximise the positive impact of the scheme on biodiversity in the future. Within the existing framework of the scheme, the so-called 'biodiversity options' and the Supplementary Measures address this issue to some extent. New or revised options and supplementary measures, if properly targeted, are therefore likely to deliver the best results. The recommendation and development of such options and measures will be the main outcome from this project, and form the main focus of the presentation at the conference.

REPS and the Rural Development Plan offer a unique opportunity to halt and eventually reverse the declines seen in farmland biodiversity. However, REPS has not yet fully exploited this opportunity and must develop further if it is to live up to the potential it offers. The upcoming review of REPS in preparation for REPS 4 under the new Rural Development Plan provides a welcome opportunity to put forward proposals for additional Supplementary Measures and Biodiversity Options suitably targeted on key species and habitats.

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Biodiversity Options in Action

Catherine Keena, Teagasc Countryside Management Specialist

This paper examines how the Biodiversity Options, introduced with REPS 3 in 2004 are operating so far. It is based on personal experience of visiting farms throughout the country, discussions with advisers and the views of Teagasc advisers obtained through a national survey.

General

The undertaking of two options is not a deterrent to most farmers, as the increase in farmers joining REPS 3 numbers shows. However it is felt that the choice could be wider, particularly in Category 1. Interestingly, people within most areas and farming systems feel that they alone are particularly restricted. Examples include farms without tillage or stone walls, coastal or exposed farms without hedgerows, tillage farms without grassland, sheep only farms and small farms. Everyone mentions options not available to them. While two options or double a Category 1 option can be undertaken on most farms to enable them join the scheme, a question arises whether it is the most appropriate environmental work for some farms. Local flexibility is desirable.

Farmers up to 45 hectares in disadvantaged areas prefer options which do not result in the loss of forage area and associated payments under the Compensatory Allowance Schemes. This is particularly relevant to the creation of new habitats and the LINNET Supplementary Measure.

Choice of options varies throughout the country. This is shown in Figures 1 and 2. This is mainly due to regional variation and farm type where some options are suitable and others are not. However, advisers also influence choice. It is interesting to compare views and interpretations. This may increase the range of options seen as practical.

An increase in options would be welcomed. Extra payment for farmers who opt for additional work or extra options would be an incentive to those who are willing to improve biodiversity further. Future REPS could perhaps consider this.

Hedgerows

Planting new hedgerows (5B)

This was the most popular Category 1 option nationally with 30% of farmers choosing it as of April 2005. It is particular popular in Dublin, Kildare and Wicklow (over 50% of farmers). Under this option, half of the new hedgerows must be planted by end of year 2, with the remainder by end of year 4. From experience so far, the biggest concern is the lack of appreciation for good weed control. This is the most common cause of failure to establish a stockproof hedgerow. Ground preparation and good quality plants are essential for maximum growth.

According to the REPS Specification, where the extent of hedgerow on the farm is less than 100 metres, the planner should specify, where possible, that the farmer plant suitable tree species at intervals on field boundaries or other locations on the farm. Because of this, the guidelines for farmers choosing option 5B are to plant 150% of the requirement (ie. 450 metres for farms over 20 hectares). This can discourage such farmers to take this option.

New hedgerow planting 5A includes the establishment of hedgerows along remnant field boundaries. Hedgerow banks of briars and low-growing hedgerow vegetation with few escaped stems to coppice can be included in this option, provided lengths with sufficient stems are excluded from the new planting requirement. Care should be taken not to interfere with or replace important bank vegetation and invertebrates. It may not be appropriate for banks to be planted with hedgerows, if not traditionally there. Planting new shrubs into existing vegetation on dry banks is clearly more difficult than planting in a green field.

Planting
This is carried out when trees are dormant. Autumn is best in free-draining ground, spring in heavy soil. In areas of the south east where drought often occurs in early summer, now is the only suitable time to plant. Avoid waterlogged soil and very wet or frosty weather. Cultivation before planting is essential for optimum growth. Digging in well rotted Farm Yard Manure encourages growth. Two to three year old plants are suitable. Bushy, healthy roots and thick lower stems are more important than height. Roots must be kept moist before and during planting to avoid drying out and dying. Plant to the same depth as plants were previously planted and firm in.

Allow up to eight plants per metre. A staggered double row is preferable with plants 250 mm apart and 300 mm between rows. A single row at 250 mm spacing may be adequate, if kept weed-free, with light material trimmed back each year to encourage dense growth.

Weed control
Weeds can smother young plants. Shrubs surviving alongside weeds grow poorly as they compete for water and nutrients. While they may struggle up through the weeds, they do not spread outwards at the base as is required for a dense stockproof hedgerow. So, before planting, weed contol should be planned.

Manual weeding requires major commitment and is not easy. Monthly weeding is necessary to keep free of vegetation at the base and allow shrubs develop low down. Using a strimmer to clear grass close to shrubs often damages the bark. Spray drift from a total weed-killer can kill or stunt young shrubs.

Mulches or plastic exclude light, which prevent weeds germinating. Examples are sawdust or bark mulch. Hedgerow trimmings which are shredded are suitable and make a useful alternative to the problem of their disposal. These can be provided from material on farms by contractors with chippers or mulchers. Machines are also available to hire out from some local plant hire companies. Those machines capable of chipping six inch tree logs appear to clog up with lighter material such as hedgerow trimmings. Such material can be handled with another machine type.

A metre wide strip of silage plastic works well when whitethorns are cut back to 100 mm after planting, as recommended. Press plastic down over the cut stumps. Cut slits to plant other species through the plastic. Keep plastic in place with inert material such as gravel or quarry dust.

Choosing species
Native species, adapted to Irish conditions benefit wildlife more. Thorny species such as whitethorn or blackthorn are essential for a stockproof hedgerow. A variety of species provides a varied food supply throughout the year for more wildlife, so include another hedgerow species approximately every metre, such as holly, hazel, spindle or guilder rose. Climbers such as dog-rose or woodbine can be included. These survive routine trimming, but other tree species such as crab apple, birch, wild cherry or oak, should be included only where they will be allowed to grow up and mature and are NOT topped when trimming the hedgerow. While some of the trees under option 4B can be planted in new and existing hedgerows, they will cast shade and weaken hedgerows.

Fencing
If sheep are not present, temporary fencing is recommended. This can be moved as necessary and removed later. Consider livestock reach and future access for machine trimming. Hare and rabbit-proof fencing may be required.

Hedgerow rejuvenation (5A)

This was another popular Category 1 option, chosen by 28% of farmers. Over half of REPS 3 farmers in Monaghan, Cavan and Tipperary have opted for this. Choosing appropriate hedgerows is the key to success with rejuvenation.

Trees and shrubs have a natural lifespan. With limited natural regeneration or seeding within hedgerows, over time they can die. Given time, space and absence of management, they grow up, mature and die. Their lifespan can be extended by rejuvenation. This is major surgery. It should only be carried out on relatively healthy hedgerows. If in doubt, try an occasional stem and assess the response.

In general, relict hedgerows should not be rejuvenated. Relict hedgerows have become a line of mature trees and shrubs. The trees have a distinct bole and full canopy. They may not respond to rejuvenation and are a valuable wildlife habitat, which will take over a hundred years to replace.

Escaped hedgerows are suitable for rejuvenation. At some stage, through lack of management, they have grown high and ‘escaped’, loosing their dense base, but have not yet become a line of mature trees with a full canopy. These hedgerows are typically thin at the base, with perhaps some gaps, and are no longer stockproof. Many have been topped at 1-2 metres high at some time in the past. Any hedgerow requiring wire to retain stock belongs in this category.

Density of shrubs
For successful rejuvenation, it is preferable to choose an escaped hedgerow with sufficient stems of whitethorn that no inplanting will be required. A stem approximately every 300 mm should provide sufficient dense growth at the base.

Understanding the requirements of a new shrub regarding ground preparation, farmyard manure, water and weed control; it is easy to see how many inplanted shrubs fail. However, it can be successful. It is important the farmers understands this they wish to rejuvenate a very gappy hedgerow. Without successful new growth in gaps to achieve a stockproof hedgerow, is there any advantage in this effort?

Species
Thorn species such as whitethorn, blackthorn and holly respond well to rejuvenation. Smooth wood species such as ash throw up a mass of vertical shoots with little lateral growth. These destroy the dense base of the newly rejuvenated hedgerow. Hedgerows with many trees are not suitable for rejuvenation unless coppice timber is desired. Occasional trees can be left in the hedgerow, too many cast dense shade over the newly rejuvenating hedgerow. Others can be cut and regrowth prevented by treating the cut stump. Leave an occasional mature thorn tree within a rejuvenated hedgerow, as it will take years for the rejuvenated shrubs to flower and fruit. It also looks well in the landscape.

Wire
This must be removed from hedgerows before coppicing with machinery. As well as damaging machines, it is extremely dangerous. It can act like a flying missile if it comes in contact with the circular saw. If employing contractors to coppice a hedgerow, it is useful for farmers to agree the proposed work with them before choosing the hedgerow.

New Habitats

Creation of a new habitat (4A):

This was another popular option in Category 1, with 29% of farmers choosing it. It was most popular in Kerry, Leitrim, Donegal, Sligo and Cork with over 40% choosing it.

While no production is allowed from this area, there is concern that complete exclusion of livestock in some areas is not the best practice. Where grassland is allowed under derogation as a Category 1option, this addresses the issue. Topping of new REPS habitats can take place after August 8th. Toppings must not be removed. Farmers prefer to fence off an area rather than linear features due to costs of fencing. Examples of linear habitats are stripes beside farm roadways.

Purpose
The purpose of the new habitat is to provide more space for wildlife on the farm. All wildlife have different requirements. Not all are found in the same habitat. Management or the absence of management will determine which plants, birds and animals will use the habitat in the future.

To top or not to top?
If not topped, what will happen? Without farming, woodland is the climax vegetation that would prevail over most of Ireland. Grassland is overgrown with scrub and

finally by trees, which grow up through the scrub and largely suppress it. Mixed age stands of local, native species develop over time.

The word scrub has unfortunate connotations. It is often found on poor, inaccessible land, which has been unprofitable to cultivate. However, whatever the reasons for its presence, it is a valuable habitat and a landscape feature. So while there is no desire for wholesale scrub encroachment on abandoned farmland, areas of scrub woodland within the farmed landscape benefit certain wildlife. This is particularly true on intensive farms with few areas of scrub nearby.

Scrub doesn't suit other wildlife, such as breeding waders. Lapwing only nest where vegetation is short. Curlew and snipe nest on open wet grassland with rushes, sedges and tussocky grasses, but not if they become too dense.

Plan for habitat
While the present commitment for the new habitat under REPS is for five years, this may continue in future schemes. Therefore, consider what is desirable for these habitats in ten years time? Every site is different.

Trees

Broadleaf trees planting (4B)

This was chosen by 17% of farmers, being most popular in Dublin and Cork with one third of farmers opting for it. The most vocal criticism of all options is the requirement to plant 25% of the broad-leaved trees in open ground under this option. Advisers report this requirement has put farmers off using this option because they have spent generations trying to make land and with small fields. Farmers are willing to plant trees on the farm until they hear about having to plant trees in open ground. There would be greater uptake on this option if all the trees could be planted in hedgerows even if a greater number of trees were to be planted. "We are, after all, a nation of small farmers, not one of sizeable estates like our near neighbours" a farmer quipped at a REPS course.

There are examples of where groups of trees have fitted in well around existing obstacles in open fields, such as individual trees, wells and pumphouses. Trees in open areas near the dwelling house and farmyard landscape and add to the visual appearance.

Landscaping around the farmyard (8A)

This was only chosen by 4% of farmers, being most popular in Waterford. Advisers find it hard to convince farmers due to the requirement to take 0.1 ha out of forage area. They do not want to lose that much land around the farmyard. It is suggested this should be an option in Category 1.

Under the broadleaved tree planting, option at least half of the planting must take place by end of year 2, with the remainder by end of year 4. Trees that fail to establish must be replaced. If landscaping around the farmyard under option, the work must be completed by end of year 2.

Planting

Planting a tree may seem a simple job, but you must get it right. Otherwise you may end up with a dead tree and wasted time and effort. Bare-rooted trees should be planted during the dormant season, from November to March. Container grown trees can be planted throughout the year, but are more expensive. Autumn planting is preferred for deciduous trees. Spring planting is best for evergreens. Do not plant if ground is frozen or waterlogged.

Roots must have minimum exposure to air before or during planting. With bare rooted trees, cover roots with damp hessian and enclose in a plastic bag. Never leave exposed. A few minutes exposure to drying winds can result in failure. If planting is delayed, they should be temporarily planted in a trench.

Smaller trees may not need staking. In exposed situations, a small stake tied low down is advisable. Remove after a few years. The sooner a tree can depend on its own roots, the better. Check regularly to ensure the tree can expand. Many trees are choked to death by ties not expanding.

If staking, make a hole for the stake with a crow bar. Drive the stake with a post driver about 0.5 metre into the ground. Dig a hole on the leeward side of the stake. It should be wide enough to take the spread of the roots and deep enough for the tree to be at the same level as in the nursery. Mix soil at the bottom of the hole with compost or well-rotted farmyard manure. Never allow fresh farmyard manure or fertiliser directly onto roots.

While filling in, shake the tree to help settle the soil around the roots. Firm around the tree. Leave the final level of the soil a few centimetres above the original level.

Fence against livestock as necessary. Tree guards or shelters protect against rabbits and hares. Keep weeds under control for the first few years.

Choice of tree

Bare rooted trees are recommended. They must be planted during the dormant winter season, before buds open. Smaller healthy trees, normally two years transplant and grow better. .A good bushy root system is important. A thick root collar is also important. Plant to the same depth as previously planted.

A Teagasc survey in the Castlerea district of County Roscommon examined awareness of tree species. There was a high awareness rate for trees such as ash, oak, hawthorn, sycamore, beech and horse chestnut. Others such as birch, holly, willow and alder had low rates of awareness. Although present, no farmer listed crab apple, rowan or elm on their farm.

When planting, farmers choose trees with which they are familiar or what is available locally. It is preferable to plant native. Native species are used by more wildlife. Three common species which are not native are beech, sycamore and horse chestnut.

They were introduced here in Roman times. While they have become naturalized in certain areas, farmers will notice they are not generally found growing naturally out the land.

Consider tree height. Oak, ash and scots pine grow to over thirty metres. Hazel, holly, hawthorn, spindle, rowan and crab apple remain below fifteen. Alder, aspen, birch and wild cherry are in between.

Tree species growing naturally in the area are preferable. Take note of less common species. Choose carefully. Trees remain long after those who plant them (Maireann an crann, ach ní mhaireann an lámh a chur é).

Field Margins

Nature corridors (4C)

These were the most popular option in Category 2 with 26% of farmers taking this option. Over half the farmers in Meath, Kildare, Laois, Louth and Carlow choose this.

Avoiding fertiliser in field margins
Broadcasting spreaders achieve an even spread of fertiliser by using an overlapping pattern of distribution. Modern fertiliser spreaders can now operate at greater widths than before with many capable of operating at widths of over 36m while some can operate at up to 48m. A modern spreader can throw the fertiliser twice the width at which the tractor is driving. For example, the working width at which the operator is driving may be 12m but the fertiliser is actually spreading a total width of 24m.

Boundary Spreading Mechanisms
Various means of altering the spread pattern for boundary spreading are available with each manufacturer using slightly different techniques. In most cases where systems ensure no fertiliser passes the crop boundary into the field margin, slightly less fertiliser is spread in the crop area adjoining the boundary.

Boundary discs: A common and low cost method for boundary spreading is replacing the disc next to the boundary with a special boundary disc. The operator must leave the tractor to change the disc before and after the boundary run in each field. The disc can sometimes be difficult to remove and refit. Also, the process is time consuming especially when operating in small fields.

Tilt mechanisms: Another low cost option is a tilt mechanism. This system enables the machine to be lowered hydraulically on one side. The spread pattern is concentrated within the field boundary side while the spread pattern on the other side is relatively unaffected.

Feed position of fertiliser onto disc: A more complex solution is to alter the drop position of fertiliser onto the disk next to the boundary. An electric actuator moves the spout to feed fertiliser to a special third vane on the disc, which results in a shorter

throw with exact cut-off while maintaining the application rate. The main advantage is the simplicity of operation where a mere flick of switch makes the change from normal spreading to boundary spreading.

Reversible discs: With this system the vanes are double sided and work differently depending on which direction the discs rotate. When boundary spreading, the pull of a cable switches the direction in which the discs rotate. As the second side of the vanes are designed for boundary spreading, fertiliser is concentrated within the crop boundary.

Deflectors: A number of manufacturers have now developed the technique of passing the boundary side spread pattern through an adjustable trimmer or steel vanes which physically alter the trajectory of the fertiliser for boundary spreading. The advantage of this system is its simplicity of operation as it is hydraulically lowered when required and raised when not.

Attachments: A diverter plate or baffle may be attached to the spreader. Oscillating spout machines can be fitted with a boundary spout.

Keeping out: While it is possible to drive far enough out from the boundary to prevent any fertiliser crossing the boundary into the field margin, be aware of how far out you must drive. Also by keeping out, substantially less is applied to the crop area adjoining the boundary.

For environmental and financial reasons, accurate boundary spreading is essential. It is an important consideration when purchasing or operating these machines. Manufacturers are perfecting boundary spreading technology but as with most machine operations the responsibility for its effectiveness depends on the operator to ensure that the system is set-up and used properly. Read the manual for each machine.

Watercourses

Watercourse options are only available to farmers with bovines. **Option 3B to exclude bovine access to watercourses** was chosen by 16% of farmers. It was chosen by more than one in four farmers in Monaghan, Cavan and Limerick. This option applies whether the watercourse access was being used previously, as it is a commitment not to use any watercourse access for the five years, which is not a requirement of the basic REPS scheme.

A difficulty with this option is that advisers find it difficult to explain to farmers the logic of two water troughs where a single stretch of watercourse exists on a one field.

Increasing watercourse margins (Option 3A) was only chosen by 5% of farmers. It was more popular in Kilkenny and Waterford at over 10%, perhaps by farmers joining REPS for the first time with no existing fence.

Grassland

The absence of any grassland option in Category 1 is a major issue, as this is the most common habitat on many farms. A derogation that four times the area of options 2 qualifies as a Category 1 option can be very appropriate.

Traditional hay meadows (Option 2A) was chosen by 11% of farmers, being most popular in Leitrin, Kilkenny and Wexford with almost one in four farmers.

Species rich grassland (Option 2B) was chosen by 9% of farmers, particularly popular in Sligo, Mayo, Leitrim and Roscommon at over 16%.

Archaeological features

Increasing the buffer margins around historical sites **(Option 7A)** was chosen by 11% of farmers. Given the fact that not all farms have archaeological sites, this is a very good uptake. This option is a very positive acknowledgement of these sites. One third of farmers in Sligo have chosen this option, with high uptake in Clare and Westmeath.

Only 1% chose the public access option **(Option 7B).** The public access option is restricted to sites detailed in the Record of Monuments and Places, but the main dislike of this option are fears regarding public liability insurance claims.

Stone Walls

The Additional Stonewall Maintenance **(Option 5C)** has been very beneficial to farms with additional walls above the basic requirement. Stone wall maintenance is a labour intensive, highly skilful yearly task and has being further enhanced by this option. While not applicable in most of the country, an average of 11% have chosen this option, mainly in Galway, Roscommon, Mayo, Clare and Sligo.

Tillage options

While those not in tillage feel restricted at not being able to avail of the tillage options, interestingly, tillage farmers tend to opt for non-tillage options. Of the three options, environmental management of set-aside (9B) is the most popular. It is taken by farmers who have sufficient setaside to meet the 4 hectare requirement. Farmers can opt to keep more setaside than is required under the Single Payment Scheme for the purpose of this REPS 3 option. This extra setaside is not excluded from the REPS payment as compulsory setaside is.

Some tillage farmers don't like being tied to cropping plans which must take the green cover establishment option (9A) or the extended arable margins (9C) into account for the next five years. Tillage farmers without livestock see no benefit to having green cover with no livestock to graze. Growing brassicas as green cover has implications for rotations.

LINNET Supplementary Measure

The LINNET Supplementary Measure suits larger farms as LINNET payments replace the lowest basic REPS payment of €200, €175, €70 or €10 as appropriate on each farm. Farmers like the idea of doing something positive for wildlife rather than abandonment.

The area under LINNET can be excluded when calculating a farmer's option requirements. This benefits smaller farmers below the 20 hectare maximum cut-off point for options calculation. For example, a 15 hectare farm with 2.5 hectares of LINNET is required to carry out 12.5 ha x 2m x 5 years =125m of rejuvenation under Option 5A.

Another issue is the opening of 3 plots in 3 separate grass areas unless there is a derogation to include all areas of LINNET together in the one field with a margin in between to create more edge effect for access by wildlife.

A concern of farmers is the requirement with a two year mix including kale to resow the cereal element of the two-year mix at the start of the second spring by broadcasting. The practicality and effectiveness of this is questioned.

Category 1 County Options - April 05 (%)

Option	4A	5A	5B	5C	9A	9B	9C
	New habitat	Hedgerow Rejuvena-tion	New hedgerow	Extra stone walls	Tillage green cover	En. Set aside	Tillage margins
Average	**29**	**28**	**30**	**11**		**1**	
Carlow	24	32	32	7	1	3	1
Cavan	21	57	21	1			
Clare	29	10	41	20			
Cork	40	24	27	6		2	1
Donegal	43	13	33	8	1	1	1
Dublin	15	2	65	2		13	2

Galway	19	10	25	46			
Kerry	48	19	30	3			
Kildare	16	24	51	1	1	6	1
Kilkenny	23	46	23	4		4	
Laois	20	38	37	1		3	1
Leitrim	46	20	29	5			
Limerick	20	43	32	5			
Longford	27	46	24	3			
Louth	16	40	34	7			3
Mayo	36	11	29	24			
Meath	22	39	33	2		3	1
Monaghan	12	60	27	1			
Offaly	30	22	40	7			1
Roscommon	26	13	31	30			
Sligo	41	13	28	18			
Tipperary NR	17	48	32	2		1	
Tipperary SR	23	50	21	2		3	1
Waterford	31	39	25	3		2	
Westmeath	19	43	37	1			
Wexford	25	37	25		1	11	1
Wicklow	24	18	50	3		4	1

Category 2 County Options – April 05 (%)

	2A	2B	3A	3B	4B	4C	7A	7B	8A	9A	9 C
Option	Hay meadow	Species rich grassland	Watercourse margins	Watercourse: no bovine access	Tree planting	Nature corridors	Archaeological margins	Archaeological access	Landscaping farmyard	Tillage: Green cover	Tillage margins
Average	**11**	**9**	**5**	**16**	**17**	**26**	**11**	**1**	**4**		
Carlow	6	7	6	11	17	43	5	1	4		
Cavan	8	14	2	27	9	27	11		2		
Clare	12	10	3	20	9	22	22	1	1		
Cork	12	5	5	19	37	11	4	1	6		

Donegal	7	15	2	8	24	39	3		2		
Dublin	3		3		39	42	5		3		5
Galway	8	11	8	8	14	34	12	1	4		
Kerry	12	11	5	20	24	11	9	1	7		
Kildare	5	1	8	8	15	54	2	1	5		1
Kilkenny	24	3	12	18	8	15	9	1	9		1
Laois	8	1	5	10	20	48	6		2		
Leitrim	24	16	2	8	7	25	15	1	2		
Limerick	11	4	3	25	12	27	11	1	6		
Longford	13	15	5	23	5	20	16	1	2		
Louth	4	2	2	22	13	46	8		2		1
Mayo	4	17	4	15	18	23	17		2		
Meath	4	3	3	10	10	60	8		2		
Monaghan	1	1	1	39	10	41	5	1	1		
Offaly	6	4	8	20	9	42	7	1	3		
Roscommon	13	16	8	11	10	31	9		2		
Sligo	13	19	2	6	11	11	33	1	4		
Tipperary NR	22	7	5	14	13	21	11		7		
Tipperary SR	14	5	3	16	16	27	11		7		1
Waterford	10	6	10	22	23	13	6	1	9		
Westmeath	6	5	5	9	11	40	22		2		
Wexford	24	3	5	18	20	21		1	7	1	
Wicklow	6	4	6	8	25	40	2	2	5	1	1