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The new REPS Scheme 2000

Frank Rath

Department of Agriculture, Food and Rural Development.

The European Commission as part of Ireland's Rural Development Plan has recently approved REPS for the period 2000 to 2006. Participation levels are projected to increase to 70,000 and a budget of IR£1.6 billion has been agreed. This represents over a three-fold increase on the expenditure on the Scheme during 1994 to 1999 period, during which IR£464 million was paid to about 45,000 REPS farmers.

Ireland submitted an independent evaluation report of REPS to the European Commission in July 1999. The commission has acknowledged that the evaluation of REPS has shown that the programme corresponds to the purposes of Council Regulations 2078/92 and demonstrates that it enables the objectives of the Regulation to be achieved. The evaluation concluded that the measures which constitute the Basic REP Scheme represent an appropriately mixed selection of requirements to address the key aspects of agricultural production which are felt to be either environmentally unsustainable or on which protection or conservation emphasis had not been placed previously.

REPS 2000 is closely modelled on the existing Scheme as recommend in the 1999 Evaluation Report. In my presentation I will outline the main changes in the Scheme Document/Administrative provisions and in the new REPS specification.

Administrative and Scheme Changes.

- Where the plan provides for grazing of livestock owned by others, such grazing shall be restricted to a maximum of three consecutive months between 1st April and 31st October each year.
- A 10% increase in payments to farmers with holding of not more than 20 hectares.

- REPS plans must be compatible with Good Farming Practice.
- Farmers with target area may opt for payment on the target area only and apply Good Farming Practice in the rest of the holding. The maximum area fir payment is 10 hectares on which participants can receive just over IR£1,900 per annum.
- A farmer in the Scheme who rears female animals of rare breeds may qualify for a once off payment of IR£315 per registered bovine/ovine.
- Where livestock production is undertaken, Organic Farming payments shall be computed on the basis of a minimum stocking level of 0.5 L U per hectare of the forage area qualifying for payment.
- It will be mandatory for participants to attend a training course before reaching the end of their second year in the Scheme, who will be paid about IR£100.
- A new REPS Planner Document sets down criteria for the approval of planners/planning agencies, training of planners, warnings/suspension of planners and appeals procedure by planners against warnings/suspensions.
- All land parcels must be identified using the IACS/LIPS numbering system, plus a field or plot number numbered sequentially irrespective of townsland.
- Reductions in the level of compliance inspections from 50% to 25% by the introduction of risk analysis in the selection procedure.
- Situations where an amendment to an existing REPS plan will no longer be required
    - Short term renting of less than 6 hectares.
    - Site sales of less than 1 hectare of original holding.
    - Changes of less than 10% (of original REPS farmed area) from tillage crop to grassland where there is no change in the area being farmed.

However in all of these situations a revised REPS 1A form must be completed together with a map of the areas in question and a declaration by planner that

(s)he has fully explained the REPS requirements relating to these changes and that these comply with the terms and conditions of the Scheme.

- In the case of Grazing Rights/Commonage Shares for which there is no documentary evidence of area entitlement on title the conditions to be included in a joint affidavit to be signed by all right holders are set down in specifications.
- Where turbary rights are held by others on privately owned land and these are not being used, the applicant may apply for payment on such lands without excluding the turbary area.
- Lands farmed outside the State shall be declared on the plan.

Summary of main changes to Specification

- Where additional animal housing or waste storage facilities are required to comply with REPS or Local Authority requirements, these must be in place before the first winter after the commencement date of plan.
- Chemical phosphorus should be applied to peat soils as early as possible in the growing season but in any event not later than May 31st to prevent leaching losses.
- More emphasis on adherence to correct soil sampling procedures.
- The maximum level of chemical nitrogen, which can be applied to grassland, can never be greater than the planned level of nitrogen from animals and other wastes applied on the same area.
- If lime requirement is one tonne per hectare or less there is no requirement to apply lime to such areas.

- Where the level of chemical nitrogen being applied to a plot or field is less than 40 kgs per hectare, the planner shall excerise his/her discretion in relation to the liming of such grassland areas.
- Where the specified lime requirement is 5 tonnes per hectare or less this must be applied before the end of the second year of the plan.
- All slurry produced during the winter housing period must be spread by 31st August.
- Slurry applications shall not take place between 1st October and 15th January.
- All chemical nitrogen applications shall cease by 1st September on established grassland.
- Where land is being direct reseeded an untilled/ploughed margin of 1m shall be left in place.
- Where clover is included in the reseed mixture and chemical fertiliser is incorporated into the seed bed within 24 hours of application it is permitted to apply double the maximum annual amount of chemical phosphorus provided none us applied to the same area in the following year.
- Locations where animals may be outwintered shall be set down in the Agri – Environmental Plan in addition to the maximum number and type of animal to be outwintered.
- The disposal of waste materials shall be carried out in accordance with the Local Authority Waste Management Plan.
- Dead animals must be disposed of in accordance with the Veterinary Regulations.
- The use of Growth Regulations on cereals is permitted.
- The records shall be kept up – to – date on a monthly basis and retained by the participant at all times for inspection throughout the period of the plan.

Eligibility Conditions (subject to European Commission Approval)

For Commonage Land/Grazing Rights

- Farmers or successors in title who own Commonage Shares and or Grazing Rights who in either 1997 or 1998 or 1999 declared the Commonage and or Grazing Rights for Area Aid and either applied for livestock premia/headage or held quota rights during those years are eligible.
- Farmers who in either 1997 or 1998 or 1999 declared Commonage Land or Grazing Rights for Area Aid which at the time of such declaration was held under a long term lease (minimum of 5 years) who acquire ownership of the land declared and either held quota rights or applied for livestock premia/headage in those years may have such shares deemed eligible.

HELPING OUR HERITAGE

Michael Starrett
Chief Executive
The Heritage Council

Introduction

It is almost two years to the day since I addressed a REPS conference in Johnstown Castle. On that occasion I talked about the scheme realising its heritage potential and laboured the point regarding the need for effective monitoring and evaluation of all the aspects of the scheme. The need for baseline studies, the need for wider involvement in the process, the need to share and improve the quality of information and most importantly of all, for us not to see REPS as the panacea, the answer to all our questions.

If I am to be true to myself (and indeed the Heritage Council) I must use that earlier presentation as my baseline, examine what progress has been made in the two years since it was made (both by the Council and by REPS) and evaluate how any progress made will bring long term benefits to our heritage.

This in essence will be the basis of this presentation.

Setting out the baseline

All those months ago in Johnstown Castle the key points which were made were as follows:

- **that a comprehensive monitoring programme be incorporated in to REPS and that specialised studies (such as those initiated under the Walsh Fellowships) be used to supplement the programme**
- **that a multi-disciplinary heritage management unit be established within the Department of Agriculture**
- that the Heritage Services has a greater and direct involvement in the administration and monitoring of the scheme
- that REPS is not used as a catchall for conservation management outside state land particularly as it relates to the implementation of the Habitats Directive
- that measures to consider cumulative and tiered payment systems for quality habitat be introduced and that these should include options for habitat creation.

A number of other suggestions were made by the Heritage Council over a period of time all of them seeking to maximise the benefits of the scheme for our natural and cultural heritage. These include:

- the new round of REPS should begin with a baseline study of each farm, on a field by field basis, to be undertaken when each farm first enters the scheme.

This will enable an assessment of the progress made in heritage management through the course of the scheme

- REPS plans should identify all wildlife habitats and archaeological sites on the farm, at a level of detail which is meaningful for effective management. This would require the direct involvement of qualified ecologists and archaeologists
- REPS plans should deal in greater detail with habitat management.

What has been going on?

The answer to that very simple question is - quite a lot. The problem is, in terms of helping our heritage, we won't know for quite some time just how helpful any of our work will be. You are all in a much better position to know how effective you feel the new measures in REPS will be. Certainly the emphasis on how success will be measured has shifted fairly dramatically. I hope that it is appropriate to quote Eugene Ryan in his capacity as Head of REPS on this matter. The marginally paraphrased quote is

"…it is the maintenance of habitats that distinguishes farms in the REPS scheme from others. It will be the measured improvement in habitat protection and development and the consequential improvement in the biodiversity in terms of flora and fauna that will determine whether REPS has been a success".

Statements such as this really reflect the way forward and whilst it could be argued that this is not a real shift I know, from talking to those most directly involved, that it is in terms of attitude and approach across the spectrum of all those involved in REPS. This will help. In Johnstown I also talked about the marriage of two sciences, one well established (agriculture) and the other relatively new (heritage and countryside management). One was backed by a plethora of scientific information used to inform decisions. The other at that time was plagued by a lack of consistent qualitative information. I very much hope that The Guide to Irish Habitats recently published by the Heritage Council is seen as contributing both to the marriage of the science and towards Eugene being able to achieve the success referred to above.

Council has also published research since the time in Johnstown Castle which highlights a major problem but which also hopefully offers potential solutions. This research looks at Archaeological Features at Risk and shows that the loss of such features (and here I am not talking about Grianán of Aileach or Brú Na Boinne but the many small archaeological features on the sites and monuments register) is currently accelerating. This at a time when we are talking about increased awareness and understanding and appreciation of our heritage. The reasons for the losses are simple and clear and in fact relate to findings published by Teagasc in its very fine Irish Agriculture in Transition document. The ever decreasing number of individuals involved in farming leads to farm amalgamation leading to increase in farm size, and more often than not a change in family ownership, leading to a loss of knowledge about areas at local level. Couple this with a less than perfect system to share information and to let people know just where sites of importance are located and the current losses are easily explained. Certainly again Council has been seeking to secure greater openness regarding information and to make it accessible where it can be of most benefit, at local level. REPS has a major contribution to make here in terms of the quality of the farm plans.

There is also a need to concentrate on the rest of the Irish landscape, i.e. those areas which are outside the REPS for one reason or another. In this context

Council recently submitted to the Minister for Arts Heritage Gaeltacht and the Islands, in its prepublication format, a policy document entitled:

Towards integrated policies for Ireland's Landscape

The policy document was developed to suggest a way in which all those agencies which impact on our landscape might co-operate and share information which would lead to a system which would derive mutual benefits for them and the Irish Landscape. The work was guided by a very broadly based group representing the majority of government departments and individuals who have an interest in this area of activity. An agreed vision for our landscape was arrived at, a vision which recognises how the Irish landscape is a dynamic landscape which should meet the needs of people and other aspects of nature in a harmonious manner. The document recognises the need for closer links to be forged (reinstated) between cultural and natural aspects of our landscape. Some of its findings are based on a very successful pilot project in County Clare which advocates the development of landscape characterisation on a national, regional, county and local level to assist in a wide range of activities which impact on the landscape. Certainly one of the beneficiaries of such an approach (should it be fully adopted) will be the agri-environment programmes.

Summary

In such a short space of time it is very difficult to demonstrate fully how far we have come. Certainly we must never lose sight of the fact that there is a very real problem. What has happened in the last 50 years in the Irish landscape is not sustainable. We wouldn't have OECD reports highlighting problems with our ground water or looking at agricultural indicators if there wasn't a problem. What is tragic is that this was anticipated. As a young undergraduate I remember the profound influence of reading a publication entitled *Blueprint for Survival*. All those years ago the science didn't allow the arguments put forward in such publications to be articulated fully and we all know it is just not good enough simply to articulate threat. If it is to be taken seriously it has to be backed up.

We are much better equipped now to articulate the arguments in a way which is seen as beneficial. It touches on the nub of the matter i.e. the quality of life which we offer to ourselves and the opportunities we will hand on to future generations. There is no doubt in my mind that REPS is helping heritage. It is making a very positive contribution but from the Heritage Council's perspective (and indeed dare I suggest from any perspective) it is only part of the solution. Working together we can influence and secure other solutions. Unfortunately the need to identify solutions is symptomatic of the fact that we have created a problem. My earnest wish is that having anticipated this one, hopefully just in time we can work on a much more positive approach, through the developing partnerships in the years to come. There is still a lot of work to be done.

AGRICULTURAL POLICY SCENARIO AND FOCUS ON THE ENVIRONMENT- *Some Reflections*

Brendan Kearney – Economic Consultant

Introduction

There were times in the past when we didn't know from one year to the next what the policy scenario would be but now all is changed. Multi-annual programmes are now the order of the day and a feature of most policy agendas, but now we want to move further on to see beyond the horizon!. Everyone wants to know the scenario for up to 10, 15 and even 20 years down the road but I think some of this is in the realm of speculation and frankly I would prefer if we put more emphasis on analysis and interpretation of the short and medium run timeframes first.

Having said that, the external environment is increasingly influencing policy determination within the EU, so that we are forced to anticipate how and to what extent such developments could affect the longer trends in the rural economy. In any event, we are gradually moving from an indirect to a direct approach to supporting farm incomes accompanied by a greening of the CAP. Now we are legitimising support for the agricultural sector increasingly on the basis of environmental objectives. At the same time there is concern as to how two imminent developments in particular, the enlargement of the EU and the Millenium Round of world trade negotiations, could impact on the policy configuration beyond 2006/2007. These are issues which get an airing in this presentation.

But to start from here, we will have the present policy, agreed under Agenda 2000, with some possible adjustments, with us until 2006/2007 and at that time or sometime before, perhaps, negotiations will commence once again on the next Financial Perspective for the CAP, possibly covering the period 2006/2007 to perhaps 2012/2013. This policy framework has become multi-annual in nature and whatever its negative features, at least facilitates farmers to make appropriate adjustments to their farming programme. In the meantime two points are worthy of mention. The European Council requires the Commission to submit a report in 2002 on the development of agricultural expenditure. If the budget is at that point getting out of line, some downward adjustments could still be made to the premia. Second a review of the cereals and dairy quota regimes will take place in 1992 and 1993 respectively.

In relation to the Agenda 2000 timeframe, farm incomes should hold up reasonably well in the medium-term, on the assumption of no unexpected shocks occurring. There will be the normal year to year variation in incomes due to fluctuations in market prices and weather conditions, but the underlying trend is one of relative stability with the growing influence of direct payments, which by the year 2007/2008, will account for nearly three-

quarters of total farm income. However, farm incomes will not keep pace with its usual comparator in the non-farm economy and the sector will continue its inexorable downward trend in terms of its relative position in the national economy. By the year 2006/2007 the proportion of the total **employment** in the national economy engaged in farming will have fallen to about 4%, given the rapid expansion in the total labour force and the absolute decline in farm employment. Likewise with respect to its position as a sector in the national economy, agriculture could fall to about 2% in 2006/2007.

Institutional challenges facing Agricultural Policy

The two most potentially serious issues which faces the agricultural sector are the forthcoming enlargement of the Union and the Millennium Trade Round. Twelve countries are in the queue to join the Union. In the ***enlargement*** *negotiations, one of the largest and most complex areas to be negotiated is the Agriculture Chapter. Negotiations on agriculture commenced only in June 2000 and are likely to proceed slowly. While there is general support for the forthcoming enlargement to the ten Central and Eastern Europe candidate countries, there are obvious concerns relating to the agricultural sector. The GDP per capita in this bloc is less than half the EU average, and the accession of the CEE countries would increase the EU's agricultural land area by 45%, and double the farm population of the EU. From a financial perspective, the two main issues are, the magnitude of the budgetary provisions for enlargement, and the expectations of the applicant countries to receive direct payments for farmers.*

The seven-year "Financial Perspective" agreed at the Berlin summit provided for no increase in the EU budget ceiling until at least 2006, and there was no mention of extending CAP direct payments to the new members. However we do not anticipate that given the pace of accession, there will be significant financial resources required up to 2006 at least.

The main issue relates to the financial requirements to cover accession and whether this can be done with the current agreed budget or whether and to what extent the budget will be increased after 2006.

The issue of target dates with respect to the timing of accession is one of the more controversial issues in the enlargement process. Since the commencement of negotiations, various dates have been proposed but it is not yet clear what the date of the first enlargement will be, nor how many countries will accede in the first wave.

Statements from the European Commission indicate that they would like to see enlargement commencing before the end of the term of office of this Commission. Commissioner Verheugen, in a speech in the Hague, on September 12 2000, suggested the possibility of completing "the larger part" of the accession process by January 2005. Commissioner Verheugen demonstrated a preference for maintaining the momentum of negotiations over setting specific dates for accession.

However, while unwilling to give specific dates, Commissioner Verheugen has also suggested that the end of 2003 may be a realistic date for the first accessions, since some candidate countries could conclude talks by 2002. Expectations are that the Nice Summit will provide a roadmap for the future rather than specific target dates.

The EU position paper published earlier this month allows for the conclusion of the negotiations in the course of 2002 with those candidate countries who fulfil all the criteria for membership. This would put the Union in a position to welcome new Member States from the end of 2002, but I think this is somewhat optimistic.

The WTO and the Millennium Trade Round

The 1994 GATT Agreement on Agriculture which set out commitments to be implemented over a six-year period (1995–2000) will remain in force until a successor agreement is concluded. The main commitments were to reduce domestic support, improve market access, cut export subsidies, and reach agreement on sanitary and phytosanitary issues (SPS) with respect to their implications for international trade. The current agreement provides that supports which are non-trade-distorting and are decoupled from production (known as "Green Box" measures) are exempt from cuts under GATT rules. As part of the 1992 CAP reform package, direct payments to farmers were deemed to be only partially decoupled from production, but were linked to EU supply management policies and were classified as "Blue Box" measures. In the main, these commitments have been met at EU level. The decisions in Berlin on CAP reform mean that it will be possible for the EU to move further in the direction of agricultural trade liberalisation, but for milk and beef, EU prices will continue to be much higher than the world level, and export subsidies for these products would still be necessary.

With respect to the starting positions for the main partners in the negotiations, they have already set out their stalls. The *European Union* ***stresses that safeguarding the future of the European model of agriculture, as an economic sector and as a basis for sustainable development, is of fundamental importance. This is a result of the multifunctional nature of Europe's agriculture and the part agriculture plays in the economy, environment and landscape, as well as for society in general. In this regard, the concept of "Blue" and "Green" Boxes should continue, and the emphasis***

on food safety and quality would continue, to take account of legitimate consumer concerns.

The** Cairns Group **believe the negotiations must result in major reductions in domestic support for all agricultural products. All trade distorting domestic subsidies must be eliminated with only non-distorting forms of support permitted, and there is no justification for maintaining export subsidies. Close attention will be paid by the Group to compensation for the shift away from price support. The Cairns Group also demand that income aids or other domestic support measures are targeted, transparent and fully decoupled so that they do not distort production and trade. The US has a position, somewhere between the Cairns countries and the EU. However it includes eliminating export subsidies, substantial cuts in tariffs on farm products, and tightening rules on domestic subsidies.

While the general Irish interest in the next WTO round will be in favour of the liberalisation of trade in goods and services, the Irish agri-food sector will favour a slower move towards liberalisation. This is based on the fact that the CAP still provides significant protection and support to EU and Irish farmers. Agriculture Ministers have decided to support the European model of agriculture, based on the family farm, the multifunctional role of farmers in society, the rural economy and the environment.

The EU will fight hard for the retention of their Blue Box status for the CAP direct payments. Export subsidies will be under serious attack also during the negotiations, and given Ireland's interests in the milk and beef sectors, the imposition of further restrictions on export subsidies will be a key objective in the negotiations.

The time-frame for the negotiation is likely to take two to three years as the "Peace Clause" in the current agreement expires in 2003. If the forthcoming negotiations were to lead to an agreement which would apply from 2003, it could be implemented over a similar timeframe to the present agreement, but would be phased in incrementally.

Provided world prices remain fairly robust, and with the EU continuing the process of further price reduction in the next round of CAP reform, prospects for the agricultural sector are not unduly bleak. Undoubtedly, some concessions will have to be made but possibly the key challenge will be the protection of the direct payments system in whatever guise possible.

The European Model of Agriculture and Multifunctionality

As indicated above, the EU position in the WTO negotiations centres on its objective to maintain the European model of agriculture and its

multifunctional properties. The concept of the model was set out in the explanatory memorandum to the Agenda 2000 proposals. The main lines of the European Model should be:

- ***A competitive agriculture sector which can gradually face up to the world market without being over-subsidised, since this is becoming less and less acceptable internationally;***
- ***Production methods which are sound and environmentally friendly, able to supply quality products of the kind the public wants;***
- ***Diverse forms of agriculture, rich in tradition, which are not just output-oriented but seek to maintain the visual amenity of our countrysides as well as vibrant and active rural communities, generating and maintaining employment;***
- ***A simpler, more understandable agricultural policy which establishes a clear dividing line between the decisions that have to be taken jointly and those which should stay in the hands of the Member States;***
- ***An agricultural policy which makes clear that the expenditure it involves is justified by the services which society at large expects farmers to provide.***

It highlights and defends the many functions which agriculture has played in the economy and the environment, and pledges to support regions facing particular difficulties and to provide compensation for natural constraints and disadvantages.

These many functions are now enshrined in what has become known as *multifunctional agriculture.* The OECD are currently in the process of providing an analytical framework as a basis for understanding the concept, and outlined recently in a paper presented by Carmel Cahill. The following points from the paper are worthy of repetition in advancing the debate on the subject. Multifunctionality has almost become a slogan with widely different meanings. At one end of the debate is a group of countries, some European, some Asian, who are firm proponents of multifunctionality. They declare that policies tied to agricultural production is necessary to preserve multifunctionality. Another group of countries while the importance of multifunctionality denies any role or relationship to production or trade.
The OECD work on multifunctionality notes its key elements. They are:

- The existence of multiple commodity and non-commodity outputs that are **jointly** produced by agriculture,
- The fact that some of these non-commodity outputs exhibit the characteristics of public goods with the result that markets for these goods do not exist or function poorly.

Looking first at the question of jointness in production, if there is no jointness, i.e., if there is no technical or economic link between the commodity and the non-commodity outputs, then there is no particular agricultural policy issue to be explored and certainly no specific issue with an impact on

trade or international relations. An example of no jointness could be the maintenance of ***historic buildings and associated cultural heritage*** values in rural areas. Maintenance of these values may be possible without any agricultural production activity. ***Rural viability via agricultural employment*** is often put forward as one of the multifunctional outputs of agriculture. There is clearly a link between agricultural employment and agricultural production, but part-time farming, diversification of income sources of the farm household, and the development of non-agricultural activities in rural areas, mean that agricultural employment and rural development are much less inter-dependent than in the past.

Landscape is one of the most commonly cited of the multifunctional characteristics of the agriculture sector. However, the impact of agriculture on landscape has not always been positive. Similarly, the notion of jointness can be put under the microscope with respect to other aspects of ***environmental quality,*** some positive, some negative.

These examples tell us that we need to examine carefully whether the non-commodity outputs of agriculture – its so-called multifunctional characteristics – are really joint products of commodity production. Ultimately the issue will come down to weighing the gain to consumers from preserving some or all of the multifunctional features against the cost of intervention and support.

The need for and the nature of government intervention in the face of market failure depends on the public good aspects of the non-commodity output in question. Biodiversity or non-use values of landscape are elements of agricultural multifunctionality that have strong public good characteristics. In this sense, multifunctionality provides an argument for improved targeting and decoupling of policy measures.

The greening of the CAP

The main aspect of multifunctionality being given emphasis in the CAP is with respect to the environment. In Agenda 2000, the European Commission made clear that re-enforcing targeted agri-environmental policy is the main strategy for integrating the environment into the CAP. In addition, market policy will become more compatible with environmental requirements. While the integration of the environment into market policies was not a completely new approach, under Agenda 2000, the integration of the environment is pursued in a more general and comprehensive way. Member States are to link all direct payments given under the market organisations to environmental conditions they consider appropriate. The Commission emphasises in Agenda 2000 to make REPS the main strategy for an integration of environmental requirements into the CAP. This implies an increase in the agri-environmental budget, more targeting of measures, and an integration of

agri-environmental measures into the overall context of rural policies. Such supports are largely decoupled, and thus WTO compatible.

The impact of decoupling

The question of the degree of coupling support with production merits some consideration. It seems that further reform of the CAP will, in the context of the next World Trade Round, continue the process of separating price support from income support. In the 1993 GATT Agreement, compensation payments established under CAP reform were exempted from reduction commitments. The compensation payments were made on fixed areas and yields, and with respect to livestock, on a fixed number of head, but the next Trade Round negotiations may require a greater degree of decoupling.

The supply response of producers to a complete decoupling is difficult to assess or anticipate given the lack of precedents with respect to such a policy adjustment. The response to full decoupling will depend on the relative contribution of the payments and the returns from the market place on the one hand, and the level of efficiency of production and consequently the margin over costs, on the other. Only some general pointers to possible responses can be provided at this stage of the exercise.

With respect to the first consideration, the greater the degree of price reduction from current levels, when taken in conjunction with the offsetting compensation, the greater the potential degree of impact on production decisions. For instance, for small scale dairy producers, if their direct costs were to exceed revenue from sales they would obviously severely curtail or abandon production even in the short run. The situation would probably be more serious for enterprises which already have low margins, such as cattle. But the fully decoupled policy could also adversely affect those larger producers with moderate levels of efficiency, or again in situations where direct costs exceeded revenue. Of course producers even close to the point of direct costs exceeding revenue could not sustain production in the longer term and resources would be diverted to other forms of production where possible.

The impact on production is thus likely to be greatest where prices are reduced towards market clearing levels and with full compensation. It is exceptionally difficult to provide an estimate of the decline in production which could ensue.

Where all price supports are reduced to the extent indicated, the impact on individual enterprises will be minimised and the consequent allocation of resources between enterprises will reflect the new set of productivities arising.

The impact on output could, in fact, be less where only partial compensation is granted and where the price reduction is less severe. In these circumstances the market returns would be the dominant component of total revenue, and producers would be required to continue in production in order to maintain output and incomes, even with full decoupling.

The issue of whether the compensatory system can be denied to the new member states following enlargement is a matter which is also exciting a great deal of discussion within the EU. While partially decoupled payments modelled on the Mac Sharry reform could be the most attractive compensation option, there will be pressure to extend them to farmers in the CEECs following accession. Farm prices in the candidate countries are currently much lower than in the EU and thus there is no case for "compensating" farmers in these countries for a reduction in prices. However, in the interests of a level playing field in the context of a single internal market, even partially coupled payments would distort competition and it is likely to be impossible to make these payments in one part of the Union and not in the other.

A word about the new REPS 2000 – 2006

Elsewhere in this conference, the micro features of REPS will be and I will just make a short comment here. The main changes to the previous scheme are:

- The introduction of an additional 10% incentive for holdings of 20 hectares or less,
- Allowing non-REPS participants who have land in a target area to be paid on a maximum area of that land,
- Incorporation of the Supplementary Measure A into the general REPS.

The total co-funded public allocation for the programme amounts to 2,039.9 m Euro (IR£1,605.6m) with an expected participation of 70,000 farmers, at the end of the period. Given that the number of holdings, excluding micro holdings, will be about 125,000 by 2006 then the rate of participation of all farms in REPS will be about 55%. By that time also REPS payments will be making a very significant contribution to the farm economy accounting for about 12% of aggregate farm income and 17 to 18% of total direct payments. It will account for more than double these proportions of the relevant aggregates of participating farmers.

Concluding remarks

While the agricultural policy agenda is largely set for the period up to 2006/2007, the question arises as to what kind of policy scenario will succeed the present phase and how it will be influenced by EU enlargement and the next WTO Trade Round. With respect to the WTO Millennium Round, the EU has been gradually adapting the nature of the CAP to make it more trade-friendly, by steadily decoupling support from production. This is evident in the restructuring of the Compensatory Allowance scheme from a headage based to an area based programme. The growing focus on the environment and greening of the CAP is evident from the emphasis being placed on extensification and the increased resources being devoted to the agri-environmental scheme REPS. And last but not least, eligibility conditions have been tightened for some schemes especially the CA scheme. The major issue to be addressed in the trade talks will undoubtedly be how to protect the suckler cow and special premia, which are now in the Blue Box. There will probably be intense pressure to impart a greener colour to that box during the negotiations, even going as far as attempting to convert them into area payments, but I suspect they will survive, subject to stricter compliance conditions, and perhaps more modulation.

Whereas the threat from the Millennium Round relates especially to protection of the direct payments, which will possibly loom larger in the next phase of CAP reform, the threat from enlargement relates to the CAP budget for funding those payments and for price and market supports as well. The CAP budget as currently funded would be insufficient to support significant costs for enlargement without a substantial reduction in CAP support for the existing 15 Member States. Pragmatically one expects a two-pronged approach therefore: one pointing to some reduction in support for agriculture in the existing 15 and the other directed towards some increase in the EU budget to support enlargement. It is doubtful if accession will prove to be a bonanza for the new states given the powerful sectoral interests in the existing Union and the probable phased basis of the accession process.

Finally, whatever transpires from those two main challenges, the Millennium Round and enlargement, agri-environmental schemes will be probably be the least affected of all the measures. They could, if anything, be extended in scope, they are consistent with the European model concept and the multifunctional attributes claimed for agriculture, and they are production-neutral in character. My only concern would be that they could become production-negative, and a have a somewhat contrary impact on the role of agriculture in the wider economy.

TOWARDS A PARTNERSHIP IN THE MANAGEMENT OF TARGET AREAS – A DÚCHAS PERSPECTIVE

Dr Andrew Bleasdale

Regional Ecologist, Western Division

Dúchas-The Heritage Service

INTRODUCTION

In recent years, there has been an increasing awareness throughout Europe of the need to protect and conserve areas that have an intrinsic scientific interest. This scientific interest in an area is often a function of the flora and fauna found there or of the habitat diversity that supports this flora and fauna. In Ireland there is a diverse range of habitat types, in "natural" and semi-natural states, which account for a significant proportion of our national area. With our national endowment of heritage wealth, however, comes a serious responsibility. Dúchas, The Heritage Service, has the responsibility for conserving the scientific interest of identified areas within the country where the habitat or species value is at a premium, particularly in a European context. These areas of scientific interest are referred to as Natural Heritage Areas, Special Areas of Conservation and Special Protection Areas. In recent years, our responsibilities under the Wildlife Act and both the Birds' and Habitats' Directives have brought Dúchas into the realm of agri-environmental planning and management. Equally, the Dept of Agriculture, Food and Rural Development have long since realised the importance of habitat management and the environmental responsibilities associated with good farming practice. The future is one where both Departments will be working towards common environmental goals and this realisation has fostered a spirit of openness and co-operation that augers well for the protection of our shared natural environment.

AGRI-ENVIRONMENATAL SCHEMES – THE OPTIONS

Both Departments have developed agri-environmental schemes designed to protect the environment and to compensate farmers for compliance with individual farm plans. The Dept of Agriculture, Food and Rural Development has recently announced a new Rural Environment Protection Scheme, which it is hoped will further protect the rural environment through sensitive farm management. Dúchas, for its part, has been developing an agri-environmental scheme that will also be available to farmers whose lands are within "target areas". Target areas are habitats that have been proposed by Dúchas for designation as Natural Heritage Areas, Special Areas of Conservation or Special Protection Areas and all commonages. The farmer,

therefore, whose land falls within a target area, has the option of joining either REPS or having a Dúchas farm plan drawn up. In the Dúchas scheme, only the target area is planned, while there are options in REPS of having a full farm plan or a plan for the target area.

Obviously there are financial implications in relation to both schemes. In REPS, there is a fixed payment per hectare for the planned area and the farmer must be satisfied that the total payment will compensate him for compliance with the plan. The farmer may believe that he will not receive adequate compensation in REPS and may decide to have a Dúchas farm plan prepared for him. Under this scheme, the planner will apply the SAC management plan drawn up by Dúchas at the individual farm level and he may also apply a Commonage Framework Plan (see below) if part of the target area on the farm is held in commonage. There may well have to be a modification in farming practices for which, if this results in a loss of income, the farmer will be compensated. The rates of payment have not yet been fully agreed for the variety of alterations to farming practices that may apply. In the simplest scenario, the farmer who has to reduce his quota by fifty sheep will be fully compensated for this on an annual basis for as long as the designation remains in place. Both Departments have liased closely to ensure that their schemes are complementary and are working towards the same environmental goals. In areas where it is agreed that full participation by farmers is required, then cross compliance will be invoked. Compliance with an agri-environmental plan will be compulsory in all commonage lands and the commonage framework plan will be applied either through REPS or a Dúchas farm plan.

COMMONAGE FRAMEWORK PLANS

The Department of Agriculture, Food and Rural Development and Dúchas, the Heritage Service, of the Department of Arts, Heritage, Gaeltacht and the Islands, have undertaken to assess the impact, if any, of grazing in all of the commonages and lands with attached grazing rights in Ireland. Numerous measures were proposed to address the overgrazing of the upland and peatland resource during the first five years of REPS but there did not appear to be an appreciable improvement in the condition of commonages, particularly along the western seaboard. Both Departments agreed that an objective assessment of the condition of all commonages in the country was required and that it must be co-ordinated jointly by the two Departments. Over fifty teams were trained in the current methodology and the work has

been ongoing around the country since August 1998. It is anticipated that this work will be fully completed within the year 2000.

Commonage Framework Plans are being produced for approximately 500,000ha by teams consisting of an environmentalist, with skills in assessing the condition of the vegetation, and an agriculturalist, with skills in assessing the appropriate farming regimes for the commonages in question. The framework plans are being produced by approved agri-environmental planning agencies and plans are jointly approved by both Departments, if deemed to be of an acceptable standard. Framework plans are produced for every agricultural or management unit within a commonage. An agricultural unit may be part/all of a commonage or part/all of several commonages or townlands.

Framework Plans will be used to produce individual farm plans which are compatible with the overall strategy laid down in the framework plan. An overall destocking percentage for the commonage(s) will be specified if the commonage is overgrazed by domestic animals. The framework plan will specify if additional work is to be carried out, eg the removal of dumped materials, and a time-scale by which the work is to be completed will be clearly stated. The framework plan shall also provide for the exclusion of the use of fertilisers, plant protection products, ploughing, re-seeding, planting of trees and other prohibitions deemed necessary by the Department of Agriculture, Food and Rural Development and Dúchas.

In particular, the framework plan shall specify

- the current use of the commonage, including the type of animals that graze there
- the current condition of the commonage, its vegetation cover, soil type, flora and fauna, landscape features and other relevant environmental factors and any local variations across the commonage; this description

shall be identified on a map and will be accompanied by photographs, notes and sketches (where appropriate)

- the specific environmental objectives and an annual time-scale by which to measure and assess progress; dates by which work is to be completed will also be specified
- a schedule of environmental restrictions to be observed for the commonage or for landscape features, to protect watercourses, to protect habitats and to restore the environmental value to the land

The primary function of the framework plan is to assess the damage caused by grazing, if any, in the commonage. This is assessed by means of estimating the amount of bare peat and the condition of the heather in upland and peatland systems. A direct link is made between the amount of damage caused and the amount of destocking required. Six damage categories have been identified and the variation and extent of the damage in the commonage is mapped in subunits. Each damage type has an associated prescribed band of destocking, as shown in Table 1. The proportion of each of the damage types present in an agricultural unit gives rise to an overall destocking for the framework plan. In addition, the framework planners must acquire access permission and verify the commonage boundary, define agricultural units within stockproof boundaries, record ecological monitoring data from fixed points called stations and complete a variety of tables and descriptive forms that make up the framework plan.

To date, a methodology has been devised to assess the impact of grazing in upland and peatland systems and a manual has been produced. Trained teams are currently assessing upland and peatland commonages and are producing framework plans in accordance with the agreed guidelines. Methodologies are currently being produced to assess overgrazing in coastal sites and in areas of limestone pavement, turloughs etc. Teams will be trained in these methodologies as soon as they have been finalised.

IMPLEMENTATION OF THE COMMONAGE FRAMEWORK PLAN

Each shareholder in a commonage for which a framework plan has been produced will be obliged to abide by a REPS plan or a farm plan drawn up by Dúchas. This plan must comply fully with the criteria in the framework plan and the relevant measures for "target areas" covered by Supplementary Measure A, the agreed farming conditions, if available, and the management plan produced by Dúchas for the designated area, as appropriate. If the commonage shareholder does not elect to undertake an agri-environmental plan, cross compliance will be enforced. Within the specific agri-environmental plan, the farmer will be allocated a grazing entitlement, pro-rata to his/her share or grazing right in the commonage. Compensation under the Dúchas scheme will be paid on the basis of proven loss of income, while REPS payments are fixed and are based on the area of both target and non-target area farmed.

The implementation of the destocking prescribed in the framework plan will be applied in the same manner by both Departments, thus ensuring uniformity of approach. The actual destocking at farmer level will depend on the framework plan destocking prescription, the farmer's stocking rate,

Table 1

VEGETATION CONDITION TYPES

Undamaged	**U** *Areas where grazing damage is not detectable*
Moderate damage	**MU** *Areas where grazing damage is clearly detectable*
	MM *Areas where grazing damage is evident but nowhere very heavy*
	MS *Areas where there are many signs of grazing damage but where the S/S* threshold is not reached*
Severe damage	**S** *Based on bare peat (>5%) and heather condition*
	S* *Based on bare peat (>10%) and heather condition*

DESTOCKING BANDS

Undamaged (U)	= No reduction
Moderate to undamaged (MU)	= 20% to 40% (30% norm)
Moderate damage (M)	= 40% to 60% (50% norm)
Moderate to severe damage (MS)	= 60% to 70% (65% norm)
Severe damage (S)	= 70% to 100% (85% norm)
Very Severe Damage (S*)	= 100%

and the amount of target area involved. It follows, therefore, that different shareholders in the same commonage will have to undertake different stock reductions, based on their individual calculations. Some farmers may have to abide by more than one framework plan.

To date, no framework plans have been implemented at the individual farmer level. An interim National Framework Plan has been in place in the six western counties of Galway, Mayo, Donegal, Kerry, Sligo and Leitrim. Under this Ewe Supplementary Measure, a reduction of 30% was imposed on non-REPS participants to ensure that no further overgrazing was taking place while the framework plans were being prepared. Farmers have been compensated for this reduction in sheep numbers. When the framework plans are completed and the details of the Dúchas scheme have been finalised, the actual destocking figures for individual farmers can be calculated, where relevant. Portions of farmers' sheep quotas will be "frozen" for the period of the REPS plan or Dúchas plan. Some farmers will be allowed to increase their quota to the level that pre-dated the implementation of the Ewe Supplementary Measure if the commonages in question are undamaged. The premise behind the framework plans is that the destocking required will be sufficient to allow recovery in damaged habitats. The commonages will be carefully monitored and evaluated by both Departments to ensure that recovery takes place. It is in the interest of all farmers to manage commonages responsibly in future, as any failure to ensure recovery will undoubtedly lead to further destocking. It is anticipated that the notion of "collective responsibility" will once again return to upland stock management.

SUMMARY AND CONCLUSIONS

As is clear from this paper, the future management of target areas is not simple. It requires the close co-operation of both Departments, of the planning agencies and the farmers involved. A significant amount of work

has been undertaken to ensure the effective protection of target areas in Ireland. Both Departments have prepared agri-environmental schemes, have liased closely to prepare framework planning methodologies, have trained teams in these methodologies, have checked plans jointly to ensure consistency of approach and will work closely together in the implementation of the framework plans. The word "framework" is appropriate as these plans will provide a mechanism by which joint environmental goals can be achieved and realised. The notion that the implementation of the framework plans will be very complicated and essentially unfair is occasionally encountered. This only reinforces the idea, however, that the management of commonage and the pattern of grazing within commonage are, by nature, complicated and it is therefore not easy to apportion responsibility or blame among shareholders. The proposed system, although complex, is the fairest and most effective that has been proposed to date by any vested interest. The idea that "common sense" must prevail is also widespread but if common sense is so obvious then why has it not prevailed to date? Overgrazing will continue until it is effectively addressed and both Departments are confident of the success of the proposed scheme in achieving this goal. This can only take place through a rigorous and labour intensive survey, the application of the results of this survey through destocking and a system of close monitoring to ensure recovery. The progress in relation to the production and approval of framework plans to date is presented in Table 2.

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Table 2: Synopsis of progress to date (November 2000)

National Picture

	Area (ha)
Total national commonage area:	491,923ha
Area assigned to teams:	460,330ha
Area recommended for approval: 268,820ha	
Area assigned to teams but not approved:	191,510ha
Area not yet assigned to teams:	31,593ha
Area submitted/being processed:	93,109ha

6 counties (GA, MA, SL, LE, KE, DO)

	Area (ha)
Total area of commonage:	373,277ha
Area assigned to teams:	355,871ha
Area recommended for approval: 244,637ha	
Area assigned to teams but not approved:	111,234ha
Area not yet assigned to teams:	17,406ha
Area submitted/being processed:	66,062ha

Reversing the Decline in Water Quality

– An Overview of Regulations and Good Practice

by Sean Regan

The Environmental Protection Agency (EPA) has pointed to declining water quality "as the primary environmental challenge facing Ireland today." Official publications have documented the problem for more that a quarter of a century. In spite of major investment programmes and awareness campaigns in the agricultural, industrial and municipal sectors the problem has continued to deteriorate. It is not surprising that the latest battery of water quality legislation, national and EU, is more focused on reversing the trend than any previous measures. Many of these measures (eg bye-laws) are aimed at agriculture. This reflects an EPA assessment that the farming sector makes the highest contribution to deteriorating water quality. This is said to vary geographically (25%-75%) depending on the intensity of the farming practised.

The agricultural contribution to the problem arises mainly from phosphorus (P) in farmyard seepage and P-rich run-off from farmland. The latter may arise following the landspreading of manures and fertilisers particularly when these operations are carried out under unsuitable soil and weather conditions, and where soil P levels are excessively high. Other major P sources include industry and town sewage. Septic tanks are also thought to make a significant contribution. Though nitrogen (N) losses also play a part in surface water deterioration the effect on nitrate levels in drinking water is the major concern

Phosphorus Regulations

Water quality standards for P in rivers and lakes which were given statutory effect in 1998 (S.I. 258 of 1998) will have significant implications for many farmers. The P regulations required an immediate halt to falling water quality standards and specify significant improvements by the end of 2007. The practical effect of the new regulations was to oblige local authorities to take the measures considered necessary to ensure that P concentrations in surface waters meet the prescribed limits.

The extent of the water quality problem can be gleaned from the fact that all local authorities have over 20% of their river monitoring sites polluted while 15 have more than 50% polluted. EPA monitoring indicates that 40% of river and 19% of lake monitoring sites are unsatisfactory in the context of the P Regulations and require improvement. The extent to which some of our major rivers exceeded the new standards for phosphorus in the 1995-97 EPA study is presented in Table 1.

Table 1. Non-compliance with Phosphorus Standards in Major Rivers (1995-1997)

Catchment	No. Sampling Stations	% Stations Exceeding P Standards
Boyne	**117**	**93**
Slaney	**71**	**37**
Barrow	**66**	**74**
Nore	**121**	**73**
Suir	**174**	**60**
Blackwater	**41**	**54**
Lee	**17**	**35**
Bandon	**21**	**29**
Maigue/Deel	**38**	**100**
Lower Shannon	**147**	**35**
Upper Shannon	**205**	**36**
Erne	**51**	**82**

Source: Lucey, J., EPA.

The P Regulations mark the beginning of a more proactive approach to water quality protection which will specifically target sensitive areas with a history of poor water quality. As a first step each local authority was required by statute to prepare an action plan by July 1999 setting out measures to achieve the new quality standards. The sanctions available to local authorities have also been strengthened to include bye-laws and mandatory nutrient management planning (NMP). These compliment the powers available under Section 12 of the Water Pollution Act (1977-1990).

The EPA published a Measures Report containing a summary of the county action plans earlier this year. There are short term proposals to introduce bye-laws in 18 local authority areas. These could be in place in 7-8 counties by mid 2001. At least 18 local authorities have indicated their intention to introduce mandatory nutrient management planning (NMP) mostly in the short term (by 2002). A reporting mechanism designed to assess implementation progress requires the submission of Implementation Reports to the EPA every 2 years to 2008. The EPA is due to publish a summary of the county

reports by 30 April 2001.

The main measures focused on agriculture in the first Measures Report are outlined in Table 2**, together with the number of local authorities proposing to implement each type of measure.**

Table 2. Enforcement/ Promotional Measures Planned by Local Authorities

Measure Type	Number of Local Authorities
Bye-laws	**15**
Farm Surveys	**23**
Mandatory Nutrient Management Planning (NMP)	**18**
Issue/Enforcement of Section 12 Notices	**18**
Issue/Enforcement of Section 3 Notices	**14**
Implement Catchment Management Plans	**10**
Forestry Controls (mainly Fertiliser Application)	**12**

The measures considered to have the greatest implications for farming (ie bye-laws and mandatory nutrient management planning (NMP)) are further analysed on a county basis in Table 3. **The stated time scale for implementation of these measures is also given.**

Table 3 Time scale for Implementation of Major Agri-related Enforcement Measures by County

Measure	Ongoing	Immediate	Short Term	Med. Term	Long Term
Time scale		(Mid 2000)	(Mid 2002)	(Mid 2004)	(Mid 2007)
Not Stated					
Bye-laws	**Cork**	**Tipp. NR**	**Carlow**		**Galway**
	Kildare				
	Cavan	**Longford**	**Tipp. SR**	**Kerry**	
	Kilkenny				
		Offaly			
	Leitrim				
		Westmeath			
	Limerick				
		Mayo			
	Sligo				
		Waterford			
	Dublin S.				

Mandatory NMP	**Monaghan**	**Clare**	**Cork**	**Sligo**	**Limerick**
	Kilkenny				
	Wexford	**Tipp.SR**	**Fingal**		
	Leitrim				
			Galway		
	Mayo				
			Kerry		
	Offaly				
			Kildare		
	Tipp.NR				
			Meath		
	Waterford				

Sourse: EPA Measures Report (updated)

Though the Measures and time scales in Table 3 are not cast in stone they do give the best indication yet of the intentions of local authorities and the enforcement measures farmers can expect in the short to medium term.

Bye-laws

Section 27 of the Water Pollution Act provides for the introduction of bye-laws to regulate farming practices. So far, two local authorities (Cork and Cavan County Councils) have introduced byelaws in specific sensitive catchments. Other local authorities including Tipperary NR, Offaly, Westmeath and Mayo have developed draft byelaws. There are considerable differences between counties in the measures proposed reflecting the variation in soils, climate and farming conditions as well as the range of environmental issues being addressed. Some involve significant restrictions in agricultural practices whereas others are solely concerned with storage and management of animal manures. Some restrictions such as those on organic N and soil P levels may inhibit traditional movement of slurry from pig farms to intensive grass farms. There are general requirements to record the quantities of organic and chemical fertilisers used.

The introduction of bye-laws (where necessary) should ideally be targeted at specific problems in specific geographical areas. One local authority has proposed a blanket ban on the purchase of fertilisers containing P for all farmers in its functional area excepting the production of a local authority permit. It proposes to issue permits on the basis of soil P test advice. Such a blanket approach is considered unworkable.

The bye-laws differ significantly from the mandatory NMP provision discussed below in that failure to implement them is an offence subject to prosecution and as such are

perceived to have more "teeth" than the NMP provision. The latter appears to place more emphasis on the mandatory nature of the planning exercise than on subsequent implementation. In practice local authorities appear to be implementing NMP under the bye-laws which carry stronger enforcement provisions

Mandatory Nutrient Management Planning

Section 21A of the Water Pollution Act empowers local authorities to compel farmers to prepare nutrient management plans (NMPs) where these are considered necessary to prevent or alleviate water pollution

NMP is recognised as a key tool in curtailing nutrient (P and N) losses from agriculture. It involves a planned approach to the control and safe use of nutrients from all sources on the farm. Crop nutrient application levels are brought into line with crop requirements so that losses to the environment are minimised. Detailed guidelines on the preparation of nutrient management plans have been issued to local authorities by the Department of the Environment and Local Government. These guidelines point to agriculture as a significant player in the pollution stakes and highlight three broad areas to be addressed as follows:-

- Management practices and manure storage facilities in the farmyard.
- Management of land application of organic and inorganic fertilisers.
- Excessive use of chemical P and N.

The guidelines issued to local authorities advocate NMP in sensitive river and lake catchments and provide criteria for identifying "hot spots" where resources are to be focused.

Where a farmer receives a notice to prepare a nutrient management plan an existing plan prepared for REPS, for example, will suffice. Though failure to implement the nutrient management plan is not an offence per se, pollution arising from non-implementation may be prosecuted under the general provisions of the Water Pollution Act. There is also a mandatory requirement to keep records.

Section 12 Notice

Additional powers are available under other sections of the Water Pollution Act, notably the Section 12 Notice, traditionally used to deal with inadequacies identified

in the provision of adequately sized, properly constructed and leak proof storage facilities for slurries and effluents. Such notices generally specify a time scale for remedial works to be carried out under threat of prosecution.

IPC Licensing

Integrated Pollution Control (IPC) licensing of environmentally complex activities is one of the primary functions of the EPA. Intensive agricultural enterprises (IAEs) involving pig and poultry production above a minimum threshold size are subject to such licensing. Licensing of new (IAEs) came into operation in September 1996, while the phased licensing of established activities commenced in March 1998. A detailed NMP is always required. Enterprises with IPC licenses are exempt from the bye-law provisions.

Planning Law

Local Authorities have enforcement powers available to them under the Planning and Development Acts so as to ensure that conditions associated with exempted development status are observed in the interests of protecting the environment. Increasingly Planning Authorities require the submission of a NMP for significant farmyard developments

Catchment Based Strategy

This Government strategy goes back to a Department of the Environment and Local Government (DELG) publication *Managing Ireland's Rivers and Lakes – a Catchment Based Strategy against Eutrophication published* in May *1997*. The primary objective was to address the ongoing enrichment of surface waters on a catchment basis. The strategy was given statutory support by the Water Quality for Phosphorus Regulations, 1998.

In order to promote the catchment based approach to reducing P inputs to rivers and lakes from all sources a number of catchment based projects were funded from the EU Cohesion fund. These included the Lough Derg & Lough Ree catchment management project which covers the Shannon catchment (excluding the estuary), the Three Rivers Project for the Boyne, Liffey and Suir and Lough Leane project in

Killarney.

The Lough Derg and Lough Ree Project was particularly important, covering valuable drinking water supplies and recreational and tourism activities. This flagship project with an initial budget of IR£2.3 million has had a life span of almost four years. Based on more than 8,500 river samples collected throughout the catchment the project has identified river stretches experiencing the effects of pollution. The principal causes were catalogued in each instance so that individual local authorities could take remedial action.

Agricultural investigations were undertaken by Teagasc on behalf of the L. Derg & L. Ree Project in three selected mini-catchments, representative of the typical range of farming activities and physical conditions within the catchment. Agriculture was the sole industry in each 'mini-catchment' and there are no significant municipal or industrial discharges.

The mini-catchment studies identified the key issues to be addressed in order to achieve the desired water quality improvements. These are:

- adequate containment and management of manures generated during the winter housing period;
- improved farmyard management, particularly waste minimisation through storm water control;
- management of slurry spreading operations;
- elimination of unnecessary P inputs to lands with excessive soil fertility.

A reduction in soil P levels and an improvement in water quality was recorded in the Clarianna agricultural mini-catchment after a 3 years intensive advisory programme involving NMP. (Phelan, P J., pers. communication).

Management measures were proposed to the individual local authorities including the making of bye-laws to regulate farming activities. These were proposed for implementation in problem areas within the catchment. Using a Geographical Information System (GIS), maps of the areas likely to present the highest risk were prepared. These were divided into extensive agricultural risk areas and localised risk

areas. The making of bye-laws was proposed for the former and a system of farm surveys and follow-up action for the latter.

It could be said that the catchment strategy embodies the 'carrot and stick' approach combining intensive planning and advice with enforcement. Another essential element is financial assistance for farmyard renovation works involving pollution control investment. This is expected to be addressed under the new Waste Management scheme.

River Basin Districts

Following the success of the L.Derg & L.Ree Project in moving the catchment based approach to water quality significantly forward action is currently under way to establish a nationwide system through six/seven river basin districts (RBDs) with significant EU and exchequer funding. This initiative is expected to significantly improve the chances of reversing the decline in water quality as required in the Water Quality for Phosphorus Regulations. It will also form part of Ireland's response to the EU Water Framework Directive and will address the protection and improvement of aquatic ecology, valuable habitats, drinking water resources and bathing waters.

Investigations underway as part of the pilot catchment projects (L.Derg & L.Ree, Three Rivers and Lough Leane) to develop and evaluate measures aimed at reducing agricultural pollution will probably be extended to the new RBD management systems. This will provide wider national characterisation of farming and land-use practices which give rise to pollution, especially nutrient losses to waters. Monitoring the effectiveness of proposed action programmes for Nitrate Vulnerable Zoned (NVZs), where these are designated will be another important objective.

The development and maintenance of good working relationships between stakeholders will be an important part of the success or otherwise of the River Basin District system. A high priority will be placed on inter agency and cross-sectoral co-operation.

Water Framework Directive

The new EU directive on water quality has been in preparation since 1997. It envisages a 16 year implementation time frame to achieve at least 'good status' for all waters. Surface water status is 'good' when both its ecological status and its chemical status are at least 'good' as defined in the Directive. Groundwater status is either good or poor depending on compliance with quantitive and chemical criteria. While the Directive is primarily concerned with the quality of aquatic systems and their waters, quantity has major environmental significance for groundwater. As there is only a certain amount of recharge each year over-abstraction can affect that required to support connected ecosystems, whether rivers, lakes or wetlands.

The Directive heralds an era of tougher water quality regulations which will have to be taken on board at national level. It demands a more comprehensive and integrated approach to water management and will have significant implications for resources given its scope an ambitious targets. The Directive supports the concept of river basin management plans (RBMPs), but these will be substantially wider in scope than the earlier catchment management projects.

A number of other directives such as the Fresh Water Fish Directive, Surface Water for Abstraction Directive, Ground Water Directive and Dangerous Substances Directive will eventually be incorporated into the Water Framework Directive. These will eventually be repealed. The WFD is a very complex, which is not surprising given that it is expected to govern all aspects of the aquatic environment including surface, estuarine, coastal and groundwaters

Nitrate Vulnerable Zones (NVZs)

Nitrate is one of the common contaminants identified in groundwater world-wide. It is highly mobile and easily leached from the rooting zone. Nitrates in groundwater have posed less problems to date in Ireland than in most other countries with intensive agriculture. However, EPA reports on nitrates have shown that a significant number of public supply sources in eastern, south-eastern and southern counties have mean nitrate N levels greater than the EU guide level (25 mg/I). Agricultural sources, whether yard or field losses, are considered to make a significant contribution to nitrate levels in these areas.

The EU Nitrates Directive agreed by the Council of Ministers in December1991 establishes a maximum admissible nitrate concentration of 50 mg/l in drinking water. Consumption of nitrogenous fertilisers has been increasing fairly steadily, from 275,000 tonne in 1980 to just over 444,000 tonne in 1999. The EPA has pointed to evidence that the efficiency of the utilisation of nitrogen in fertiliser is decreasing as the quantity used increases.

The directive places an obligation on national governments to declare Nitrate Vulnerable Zones (NVZs) in sensitive areas. NVZ designation may impose severe restrictions on farming practices including stocking rate reductions. Moreover, in keeping with the 'polluter pays principal' there is no provision for compensation for complying with the Nitrate Directive. The voluntary 'Code of Good Agricultural Practice to Protect Waters from Pollution by Nitrates' published by Government in July 1996 will become mandatory in all designated zones. Identification of vulnerable areas is currently under way. Up to 13 groundwaters in counties Carlow, Cork, Kerry, Louth and Waterford have been identified as being polluted or susceptible to pollution by nitrates. The catchments which contribute to these waters are now being identified and formal designation of these areas as NVZs is expected in early 2001. Action programmes for the NVZs involving public consultation are expected to be developed by the end of 2001. The designation of further NVZs are anticipated arising from EU pressure.

Good Farming Practice

Environmental cross compliance is an EU imposed requirement which we signed up to in the Amsterdam Treaty. It requires the integration of environmental with other policies. This is a response to community demands that farming must act responsibly, preventing pollution, avoiding severe erosion and protecting valued natural and cultural heritage. This is expected without compensation. Agri-environmental payments, on the other hand, will only apply to environmental measures over and above 'good farming practice'

The EU Commission has recently introduced regulations which require farmers to apply 'usual good farming practice' in order to qualify for aid under CAP or under the

Structural Funds. 'Good farming practice' involves a range of measures which mirror those required by REPS but at a lower compliance level. Farmers are required to follow Teagasc advice on the use of organic manures, fertilisers and lime; comply with the management of manures and effluents set out in the Nitrate Code; use proper handling and storage of chemicals; and comply with animal welfare and hygiene standards. Where applicable, wildlife habitats and features of historical or archaeological interest must be protected.

The Department of Agriculture, Food and Rural development (DAFRD) is developing a detailed specification for 'good farming practice' in conjunction with the Department of the Environment. Arrangements will be put in place to monitor compliance with good farming practice by applicants for certain direct payments such as headage and on-farm investment schemes including the new farm waste management scheme. It is expected to apply to all direct payments in the foreseeable future. There will be official inspections to ensure compliance and simplified records of fertiliser use will be required.

'Good farming practice' will also requires compliance with national and EU environmental legislation and a system of 'external cross-reporting' is proposed whereby enforcement agencies will report non-compliance to DAFRD. The requirements of 'good farming practice' are expected to encourage greater participation in the waste management scheme and REPS. However, response at farm level is likely to depend on the level of policing and penalties imposed.

REPS Contribution to Water Quality

Evidence of water quality improvement has emerged in at least one catchment with a high uptake of REPS. The Kilcrow River in Co. Galway was classified as eutrophic over much of its length when surveyed by the EPA in 1996. The problems were believed to emanate from agricultural sources. There has been a high uptake of REPS (>40%) in the catchment in recent years. The 1999 EPA biological survey shows a significant improvement in water quality.

As the numbers of REPS farms increase towards the new target of 70,000 more definitive evidence of the impact of REPS on water quality will be expected. While

the effect of REPS is likely to be limited in the intensive farming areas where water quality is most under pressure it is anticipated that the regulatory framework outlined earlier will encourage compliance in this sector. So far, local authorities have exempted REPS farmers (reluctantly in some cases) from bye-law provisions on the basis of the perceived effectiveness of REPS to deliver improvements in water quality. It is in the interest of planners and farmers that REPS lives up to expectations. This comes down to the conscientious delivery of Measure 1 in all its aspects on each REPS farm.

As a group REPS participants appear to be complying with Measure 1. Preliminary analysis of data from the 2000 National Farm Survey shows that REPS farms used 20 kg and 4 kg less chemical nitrogen and chemical phosphorus, respectively, per hectare in 1999 than the non-REPS farms of similar intensity. REPS farmers also benefited financially from the nutrient management plan spending 6% less per hectare on fertilisers than in 1994.

Relative to 1994 there were very significant increases in new building investment (38%) and building maintenance (71%) on REPS farms compared with no change and a 6% increase respectively for non-REPS farms of similar intensity. This suggests that REPS farmers have upgraded their buildings and pollution control facilities as required by REPS. In contrast stocking rate and N use increased by 16% and 13% respectively on intensive non-REPS farms while investment in farm buildings declined by 17%. This suggests that intensive farmers largely representative of the dairying sector are becoming more intensive while spending significantly less on farmyard facilities.

Relative changes in annual chemical fertiliser usage in 1999 compared with 1994 for REPS and non-REPS farmers are summarised in Figure 1. While P usage fell across all three groups in the study (reflecting the revised Teagasc P use advice) REPS farmers had the greatest reduction (31%). N usage, being closely linked to stocking rate, had a different pattern. REPS farmers had a modest decline in N input while simultaneously increasing stocking rate. The significant N use reduction among extensive non-REPS farmers can be explained by a stocking rate reduction. As already indicated intensive non-REPS farmers increased stocking rate and N use considerably.

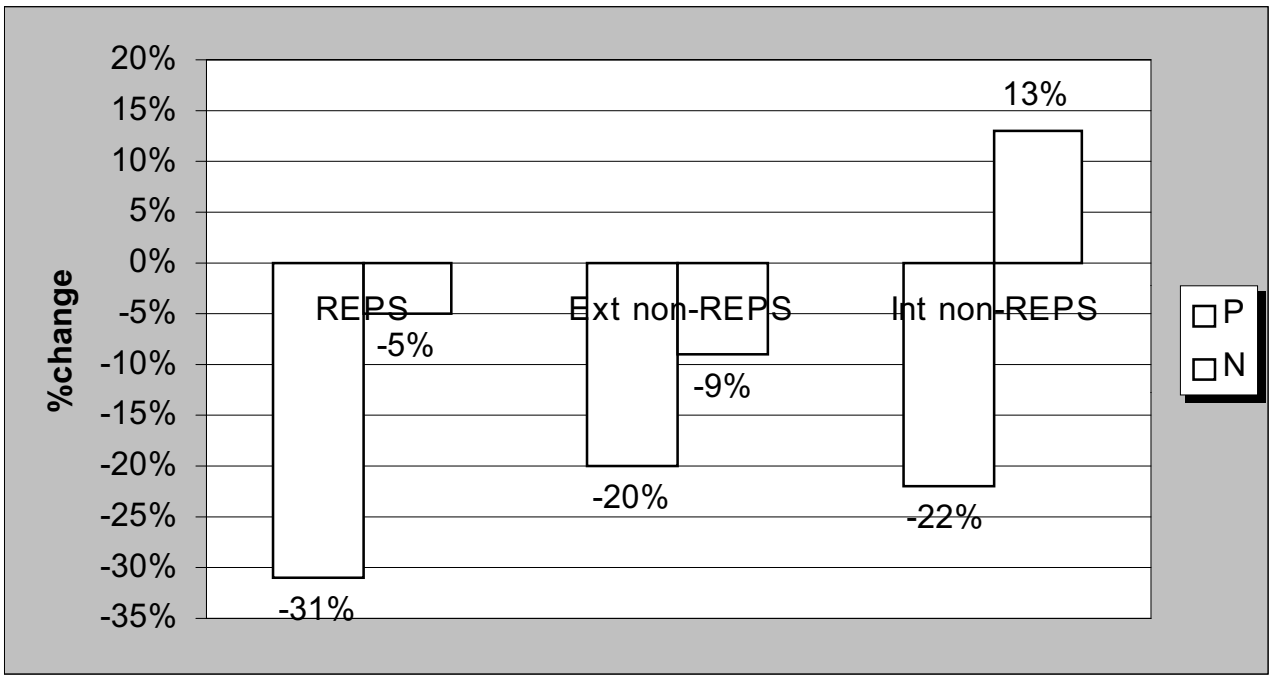

Figure 1. Change in Chemical Fertiliser Use for REPS and non-REPS Farmers (1999 vs.1994)

Awareness and Education

In recent years there has been a decisive move to strengthen enforcement of the 'polluter pays' principal. The enforcement agencies are telling us that the voluntary approach alone, involving awareness building and education, primarily promoted by the advisory service and the farm organisations is not delivering the goods. While promotional campaigns over the past decade have not always achieved their objectives, few would argue that the consciousness and the attitude of the farming population to water pollution has not altered radically. Notable changes were affected in the attitude to silage pollution in the late 1980s when annual agriculture–related fish kills were six times current levels. Another example of the effectiveness of the voluntary approach was the reduction in the use of P fertilisers arising from the successful Teagasc P reduction campaign in 1996. Though controversial at the time it marked a very significant decline in P usage down from 62,000 tonne to 50,000 tonne by 1999. The reduction in fertiliser P use reflects the substantial numbers of farmers who are prepared to follow sensible nutrient advice.

The 'up-skilling' of agricultural graduates in relation to the environment has been instrumental in successfully imparting environmental knowledge to farmers. More than 100 agricultural graduates in Teagasc and the private sector have received professional qualifications in environmental management and conservation over the past 6 years. More REPS planners should equip themselves with the expertise afforded by such courses particularly in the context of compulsory 20 hour REPS course for all participants. As planners we need to increase the depth of our own knowledge in order to make course presentation more effective and interesting for clients. Environmental expertise also assists effective engagement with the enforcement agencies. It is important to convince them that laws and regulations can be more successfully enforced when there is public consensus and acquiescence. Awareness and information programmes for farmers at county level involving the local authorities, advisory service and farm organisations are essential if declining water quality is to be reversed.

References

Department of the Environment and Local Government (1997). *Managing Ireland's Rivers and Lakes: A catchment-based strategy against eutrophication.*

Department of the Environment and Local Government (1997). *Sustainable Development: A Strategy for Ireland.*

Department of the Environment and Local Government (1998). *Water Quality Standards for phosphorus Regulations (S.I. No. 258 of 1998) Water pollution Act (1977)*

Department of the Environment and Local Government (2000), *Guidelines for the Establishment of River Basin Management Systems*

Environmental Protection Agency (2000), *Ireland's Environment – a Millennium Report. EPA, Wexford.*

Hamell, M., (1999). *Environmental Protection Requirements for Agriculture - perspective for the new millennium,* In Proc. REPS Conference, Carton, O.T. (Ed.), Teagasc, Dublin.

Lucey, J. et al. (1999). *Water quality in Ireland 1995-1997.* EPA, Wexford.

Kirk McClure Morton (1999). *Management Proposals Report - Lough Derg & Lough Ree catchment monitoring and Management System.*

Kirk McClure Morton (1999). *Interim Report - Lough Derg & Lough Ree Catchment Monitoring and Management System.*

M. C. O'Sullivan & Co. (2000). - Three Rivers Project Preliminary Report -water quality monitoring & management..

PROTECTING AND DEVELOPING HABITATS

Catherine Keena
Countryside Management Specialist, Teagasc.

Why Protect and Develop Habitats?

The reason for looking after habitats is to maintain and improve the biological diversity of flora and fauna, and the habitats in which they live. Flora includes vascular plants, bryophytes, fungi, lichens and algae. Fauna includes vertebrates and invertebrates.

Flora
The following inventory from the National Report on Biological Diversity in 1998 by the Department of Arts, Heritage, Gaeltacht and the Islands, summarises the current knowledge of Irish flora. It should be noted that there is under-recording of the lower plants; therefore, the true picture of Irish floral diversity is unknown.

Irish vascular plant species include 1228 flowering plants, 78 ferns and 3 conifers, of which 161 are under threat. Ireland is particularly rich in bryophytes (mosses and liverworts), because of its mild wet climate and relatively unpolluted atmosphere, with 759 species, of which 192 are under threat. Fungi are one of the largest groups of organisms in the world with 3,500 species recorded in Ireland. Of the 1050 species of lichen here, 34 are regarded as threatened. There are over 1400 species of algae.

Fauna
There are 31 species of mammal in Ireland, of which 3 are under threat - the whiskered bat, the natterer's bat and the ship rat. Of the 168 species of Irish birds, 29 are under threat. There is one Irish reptile species, 3 amphibians and 27 fish species. One of the amphibians, the natterjack toad is endangered, as are 9 of the fish species.

Irish invertebrates number over 12,000 including worms, insects and crustaceans. The roles and conservation needs of invertebrates are often neglected, but higher life forms, such as the mammals depend on invertebrates for their survival.

Table 1. The Decline in Farmland Birds over 20 years: 1968/72 - 1988/91
from Birds of Irish Farmland published by Birdwatch Ireland.

DECLINE	Lowland Farmland	Upland/ Moorland	Wetland & Waterside
Moderate 5-25%	Skylark Linnet Goldfinch Reed bunting Tree sparrow House martin	Curlew Wheatear	Redshank Moorhen Grey wagtail
Substantial 25-50%	Yellowhammer Stock dove Long-eared owl	Golden plover Common sandpiper Hen harrier Dipper	Lapwing Sandmartin Snipe Water rail Kingfisher Coot
Major 50-75%	Barn owl	Red grouse	
Severe Over 75%	Corncrake Grey partridge Corn bunting		

Habitats
Ireland's habitats can be grouped into a number of broad categories:

1. Coastal and marine e.g. marine islands, sea cliffs, sand dunes, and beaches.
2. Freshwater e.g. lakes and ponds, turloughs, reedswamp and marshes.
3. Peatlands e.g. raised bog, blanket bog and fens.
4. Grasslands e.g. eskers, dry grassland, wet grassland.
5. Native woodland e.g. semi-natural woods, scrub.
6. Rocky habitat e.g. limestone pavement, island cliffs, scree and caves.
7. Artificial habitats e.g. hedgerows, canals, roadside verges, commercial forests, quarries, man-made structures, parks, gardens and golf courses, arable farmland and intensive grassland, cutover bog, waste ground.

Awareness

REPS has created an awareness of wildlife and habitats among farmers, advisers and the general public, and hopefully will continue to do so. Understandably there is some confusion and misunderstanding, as outlined below.

Measure 8 which aims to improve the visual appearance by tidying up the farm and farmyard is sometimes mistakenly thought to extend to habitats and hedgerows. The designations of SAC's, SPA's and NHA's as special areas for wildlife is sometimes mistakenly interpreted as these areas being the only important ones for wildlife. Because the two most common habitats were allocated separate measures with specific requirements (Measure 5: Hedgerows and Measure 6: Field Margins) these most important habitats are not always recognised as such.

A better understanding of wildlife habitats is required. As outlined previously, all areas on the farm are habitats for some flora and fauna. The important issue is to identify which areas are to be managed specifically to improve their biological diversity, i.e. to increase the variety of flora and fauna. Prioritisation of habitats with the most potential is important and will obviously vary between farms.

Protection of Habitats

Obviously habitats must not be removed or destroyed. Less obvious destruction can occur due to spraying, fertilisation or slurry applications. Decisions on protection are not always easy. It is essential to have a clear aim for the habitat. It is useful to consider what management conditions created the habitat, and what threats, if any are present.

It must be remembered the natural climax vegetation for most of this country is woodland. The absence of grazing, or undergrazing can destroy habitats due to scrub encroachment e.g. esker grasslands, limestone pavements. It is not always necessary to fence off and certainly never a case of fencing off and forgetting about it. Protection may only be for a period of time or for certain periods of the year to facilitate recovery.

Management / Development of Existing Habitats

The purpose of any management must be understood before identifying the best management practices. Incorrect management can harm or destroy habitats. For example, hedgerow features important for stock control, shelter and visual appearance are not necessarily similar as outlined below.

Features of Hedgerows for Wildlife

Size. The larger the hedgerow volume, the better it is for birds. It must be at least 4'6" (1.4m) tall and 4' (1.2m) wide for birds to breed successfully. Most songbirds that nest in a hedgerow prefer to site their nests at least 4' (1.2m) from the ground to avoid ground predators. They also need overhead cover to avoid detection by magpies. Obviously the bulkier a hedgerow, the more food and concealment it provides.

Structure. The detailed structure of a hedgerow determines its use as nest sites, song posts, feeding sites, cover from predators, roosting sites or corridors for movement.

Birds such as dunnocks, robins and wrens prefer a hedgerow which is thick at the bottom, which provides cover when scratching for insects particularly in winter when the open ground may be frozen. The bottom of the hedgerow with its carpet of dead leaves will remain unfrozen and thus provide a rich source of food.

Tall shrubs provide the higher vantage points and nest sites preferred by birds such as wood pigeon. Small trees and saplings only a metre or so above the body of the hedgerow are used regularly as song posts by the blackbird and songthrush amongst others.

Laid hedgerows offer more nest sites for birds and concealed hibernating places for invertebrates.

Trees. Tall trees within hedgerows are used by birds as song posts, nest sites and vantage points. Some birds place their nests in ivy on trees. Owls nest and roost in tree holes.

Dead wood and trees with holes and rotten timber riddled with insects and fungi, provide nest sites and a food source. Beetles feed in decaying wood.

Species Composition. The more species of trees, shrubs and ground flora in a hedgerow, the more wildlife it will contain. Some trees or shrubs support a wide variety of wildlife. Hawthorn supports over 200 insect species. Of the hedgerow trees, willow and oak are particularly valuable, each capable of supporting over 400 different insect and mite species, while the field maple, sycamore and horse chestnut support less than 50 species.

Some trees or shrubs supporting less variety of wildlife may be valuable as the main or only food source of a particular species. For example, the brimestone butterfly depends primarily on the occurance of buckthorn.

A varied composition provides continuity of food supply for birds and small mammals, with seeds, fruits and berries ripening at different times.

Hedgebanks. Wild flowers such as primrose and bluebell grow on banks. Stony banks support ferns and lichens. Banks provide hibernation sites and warm basking places for lizzards.

Drains. Hedgerows with a drain alongside provide better feeding sites, with more insects available.

Field Margins. The opportunities for wildlife are substantially enhanced where the margin between the hedgerow and the field is left for natural grasses and flowering plants to grow. Field margins provide nesting cover for partridge, skylark and other birds. They are important as hunting ground for the kestrel and barn owl.

Connectivity. Continuity of hedgerows enables wildlife to move along. Many butterfly species use them rather than crossing open fields. Songbirds move along hedgerows using them to feed. Barn owls require over a mile of grassy margins alongside hedgerows as a flight path in order to seek out their prey.

Continuity is adversely affected by gaps in a hedgerow. When gaps only occupy a small proportion (up to about 10%) of the total length they are probably relatively unimportant to the numbers and diversity of birds present. However more gaps result in fewer birds.

Hedgerows near or adjoining woodlands contain more birds and small mammals. Similarly more birds are found around intersections of hedgerows and in those on either side of the track.

Variety and Diversity required for Wildlife. Overall, variety and diversity in hedgerows are essential for wildlife. The larger the hedgerow in both height and width the better, with a variety of species and a varied structure including trees, tall shrubs, banks, drains and field margins.

Features of Hedgerows for Stock Control

Thorny species of hedgerow shrub are essential to retain stock. A dense base with no gaps is also required. Trees such as sycamore, beech and chestnut appear to shade the hedgerow resulting in gaps. The height required is not necessarily any higher than that required to retain the stock.

Features of Hedgerows for Shelter

A good shelter belt will provide some protection into the field for up to 30 times its height, so obviously the taller the hedgerow the better. The best shelter is provided by hedgerows with a slightly open and flexible structure and a rather uneven and bushy top. The orientation of a hedgerow has implications for the shelter it provides. While the prevailing winds here are from the south-west, the objectionable wind in a particular location may come from any direction.

Features of Hedgerows for Scenic Appearance

The attractiveness of hedgerows in the countryside is subjective. Some people may like low, neat, tidy treeless box-shape hedgerows. Others prefer the tall bushy hedgerows which are one of the most distinctive semi-natural features of the Irish landscape, and feature predominantly in all tourism promotions of the countryside.

Management of Hedgerows

The objective of REPS in relation hedgerows is to maintain them in the interest of wildlife, stock control and scenic appearance. Low, neat, tidy treeless box-shape hedgerows do **NOT** achieve this aim. While the important features of hedgerows managed for wildlife, stock control and scenic appearance are not always similar, hedgerows can be managed in a way to suit all, as required in REPS.

Management must aim for a tall hedgerow, wide at the base, containing shrubs and trees, including saplings, with no gaps. Management practices such as laying or especially coppicing dramatically alter the hedgerow in the short-term, but benefit it

in the long term. They should be carried out in small lengths and in rotation around the farm.

Similarly, for all habitats, the purpose of any management must be understood. The results should be monitored and management practices adjusted as necessary.

Development of New Habitats

New habitats could be developed on all farms especially if there is a low level of existing habitats. However, this should not be encouraged at the expense of existing habitats being neglected. They should also be in keeping with the local landscape and comprise local native species.

Examples of New Habitats

- Plant new hedgerows along permanent wire fence lines.
- Plant shelter belts
- Landscape the farmyard and surrounding area with trees, shrubs and wild plants.
- Plant field corners
- Allow wet areas to revert back to wetlands
- Create ponds and wetlands adjacent to streams
- Re-seed some extensive grazing areas into wild meadow with a mixture of wild grasses, flowers and herbs.
- Put out nest boxes for barn owls.

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Summary

Biological diversity of flora, fauna and habitats is very complicated, but concentrating on the few simple principals can result in major improvements.

The reason habitats on farms are important is to maintain and increase flora and fauna. It is important that farmers are aware of all habitats. Habitats identified should be protected. Any management must have a clear purpose, and be monitored and adjusted as necessary. The development of new habitats is encouraged.

The impact of the expected 70,000 farmers in REPS 2 actively working at habitat protection and development over the next 5 years could have an enormous impact on the environment