



Environmental Pillar of Social Partnership

Submission document



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Submission to Agri-Environment Scheme

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Agri-Environment Scheme

Submission from the Environmental Pillar of Social Partnership

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Commission’s Priority Areas being addressed

Item	Action	Addressing Commission’s Priority Areas			
		Water Quality	Biodiversity	Climate Change	Resource Mgmt
2	Retain wildlife habitats	X	X	X	
7	Selected control of invasive species		X		
14	Conservation of Wild Bird Habitat		X		
17	Planting new hedgerows; Coppicing of hedgerows; Laying hedgerows	X	X	X	X
18	Tree planting	X	X	X	
20	Rough moorland grazing	X	X		
21	Nitrates	X	X		X
22	Climate change adaptation		X	X	

Submissions to Proposed Agri-Environment Scheme

Reduction in funding for environmental measures.

The members of the environmental pillar would like to express their very strong disappointment with the closure of REPS to new applicants and of the replacement of the latter with a new agri-environmental scheme with a substantially reduced budget. It is the opinion of the environmental pillar that the use of the modulated funds should be directed to the following *additional* priority areas: climate change, renewable energy, water management, biodiversity and innovation linked to the previous four points, as per Commission guidelines. The use of the modulated funds should not be redirected to replace REPS with a new, significantly reduced Agri-Environment scheme. The 2009 provision for REPS funding is estimated to be €330m. The funding for the proposed Agri-Environment scheme is €180m over the period of 2009-13, to be taken from EU Modulated Funds.

At a time when the areas of biodiversity, climate change, water quality and resource management are in need of urgent attention the reduction in overall funding is counter-productive. Biodiversity loss and climate change have been identified by the EU Environmental Commission Stavros Dimas as being the two main challenges facing humankind in the 21st century. Ireland is a signatory of a number of international and European conventions that strive towards the mitigation of and adaptation to climate change as well as halting the loss of biodiversity by 2010 and beyond. By significantly reducing the funds towards policies that work towards these commitments, Ireland is stepping into the wrong direction and will be widely open to international criticism.

Eligibility criteria for joining the scheme

The proposed measures do not outline any eligibility criteria for new applicants to the new Agri-environmental scheme. Whilst the Environmental Pillar is in favour of supporting applicants adjacent to Natural 2000 sites or in proximity to water bodies, Environmental Pillar has concerns that other factors such as socio-economic considerations might be used to excuse activities that will cause environmental damage. The Environmental Pillar would like to stress that eligibility and selection criteria reflecting the primary objective of environmental conservation should be developed for the proposed scheme.

For example, support to farms in or near Natura 2000 areas would be desirable, providing support for sensitive management of farmland adjacent to, but not necessarily including, designated salmonid / pearl mussel rivers so as to ensure cessation of nutrient runoff and siltation of these rivers or streams and thus improve habitat for these species. Similarly, specific management prescriptions for farmland near hen harrier SPAs to provide suitable foraging habitat would be ideally suited for inclusion in the scheme. In addition, DAFF should also consider applications by more intensive farms as well as farms between key

Natural 2000 sites in order to develop wildlife corridors linking important habitats and enhancing ecological connectivity, in line with Article 10 of the EU Habitats Directive¹.

Monitoring

The proposed new Agri-environmental scheme does not set out any details on monitoring the effectiveness of the scheme. Appropriate monitoring for the evaluation of the environmental delivery of the proposed Agri-environmental scheme is crucial in order to detect changes related to the implementation of measures and to provide means for the improvement of such measures. Monitoring and review are essential to the effectiveness of any management strategy, and yet seems to be omitted from the proposed scheme. The development of base-line studies and specific indicators for monitoring is crucial in any funded scheme, and will facilitate the long term continuation of support measures by demonstrating environmental benefit and justify payments for funding. With respect to the new scheme, DAFF is under an obligation to monitor and evaluate the programme in terms of its impact on the environment, its impact on agricultural production, and its socio-economic impact and to communicate the findings to the Commission (according to the Commission Regulation EC No.3 1257/1999, 1260/1999). In addition, the Habitats Directive stipulates in Article 11 that "Member States shall undertake surveillance of the conservation status of the natural habitats and species" of wild fauna and flora of Community interest, "with particular regard to priority natural habitat types and priority species."

The Environmental Pillar considers however, that a stronger monitoring system for biodiversity in particular, should be developed for the new scheme. Consideration should be given to developing an integrated and independent monitoring programme for flora and fauna.

Specific indicators will be required with each measure that is developed to ensure that each measure is in fact delivering the benefits that it purports to deliver. High quality monitoring and evaluation is essential to demonstrate the delivery of specific objectives of the Scheme, which will be required to safeguard these financial supports when they inevitably come under scrutiny. Even the inclusion of 'high nature value farmland areas' as an indicator needs defining, and details of how this is to be assessed must be developed and explicitly stated.

Training

Training does not feature in the new scheme. Training must be at the centre of the new Agri-environmental scheme. Training to farmers provided under REPS 3 and 4 have been extremely deficient in terms of teaching relevant environmentally friendly farm management skills to participants and in facilitating participants to carry out their REPS

¹ Council Directive 92/43/EEC Of 21 May 1992 On The Conservation Of Natural Habitats And Of Wild Fauna And Flora (OJ L 206, 22.7.1992, P. 7)

options in the farm management plans. Without the provision of adequate training, the new Agri -environmental scheme is less likely to be a success. The new Agri-Environment scheme should provide training to all full time farmers who are part of the scheme, to increase knowledge and skills on land management with the maximum delivery for biodiversity. An extended training programme seeking to prepare farmers for qualitative reorientation of production, the application of production practices compatible with the maintenance and enhancement of the landscape, the protection of the environment, restoration of habitats, protection of ground and surface water as well as climate change adaptation needs to be developed urgently. The training would be compatible with the EU RDP guidelines as well as with the EU Biodiversity Action Plan (Measure 4).

2 Retain wildlife habitats

Action: Permanent set-aside for biodiversity
This action will contribute to the biodiversity objective.

This is for areas identified as, or created as habitat on expiring REPS contracts. This measure must translate into long term set-aside areas for biodiversity, where management intervention is kept to a minimum and is for the primary objective of the particular habitats and species there.

It will be necessary to set a fixed target for the size of the permanent set-aside land, however, the quality and structure of the network, and proper management is far more important than the size of the area. It would not be beneficial to biodiversity if the set-aside land is left without any management which could lead to the invasion/spread of alien species. Thus habitat specific management measures must be developed in order to maximise the benefits for native wildlife.

The biodiversity area should be connected into other existing features such as hedgerows, riparian areas, existing woodland areas, grassland areas etc. to maximise the biodiversity benefit of this measure and to create corridors for the movement of wildlife. To reduce the financial loss for the farmers, these permanent set-aside areas could be located on marginal plots which are less fertile or less accessible.

Areas of improvement: water quality, biodiversity, climate change

7 Selected control of invasive species

Action: Control, monitoring and prevention of invasive species
This action will contribute to the biodiversity objective.

The current proposed measure to enhance identified non-Natura 2000 habitats in the interest of biodiversity by managing high rush, bracken, gorse, hazel and blackthorn populations in grassland habitats using targeted chemical/manual means is highly inappropriate under an Agri-Environment scheme. Whilst control of gorse, hazel, and blackthorn is in some limited cases a necessary measure for environmental objectives, it is rarely of overall benefit to biodiversity, especially if 'scrub' habitats are removed by the use of pesticides or bulldozers. In limited circumstances and with the input of a suitably qualified ecologist this could be appropriately implemented, but must not be widely encouraged through this scheme, as proposed. Instead the measure should develop a suite of measures to prevent the and the occurrence or spreading of non-native species introduced and favoured by agriculture and also to eradicate invasive alien species which constitute a threat to native species. There has been much work already carried out on invasive alien species by the DoEHLG in partnership with the Northern Ireland authorities.

Area of improvement: biodiversity

14 Conservation of Wild Bird Habitat

1. **Action:** Conservation of Wild Bird Habitat

This action will contribute to the biodiversity objective.

- a) The payment for conservation of wild bird habitats must go beyond payments only available for corncrakes in the Shannon Callows SPA.
- b) Payment for this option should reflect the work required to fulfill the agreed farming conditions and may vary significantly depending upon the species targeted and work undertaken. Therefore, the payment rate for this option should not be fixed.
- c) Farm Plan Scheme for Hen Harrier and Chough SPAs
The recently agreed prescriptions set out in the Department of Environment, Heritage and Local Government's Farm Plan Scheme for Hen Harrier and Chough SPAs should be adopted as options and be made available to farmers within these SPAs. This is an important biodiversity measure in potentially delivering enhanced habitat conditions for two Annex 1 species. As stated above, payment for these options should reflect the work required to fulfill the agreed farming conditions. Following a period of evaluation, these measures could be rolled out to areas out of designated sites.
- d) Flexibility of supplementary measures and combinations thereof
Removal of the restriction on entrants to participating in just two supplementary measures, of limited combination, would provide more opportunities for farmers to deliver farmland biodiversity. Article 27 (5) in the draft Commission Regulation laying down detailed rules for the application of Council Regulation (EC) No 1698/2005 on support for rural development by the EAFRD states that 'Various Agri-environment and/or animal welfare commitments may be combined provided that they are complementary and compatible'. We would advocate the number of supplementary measures that a farmer can avail of be increased and that the restriction in combining measures be removed.

In particular, the restrictions should not apply to farmers on Natura 2000 sites where, by default of the designation, farmers have fewer options available. It should be noted that this recommendation would have benefits for a wide range of farmers.

2. **Action:** New pilot measures for priority species and habitats

The conservation of farmland biodiversity in the wider countryside should be regarded as a high priority for the new agri-environmental scheme and so we would advocate that measures are to be broadened to include measures for priority species outside of Natura 2000 sites. Measures should be targeted to Annex 1 species under the Birds Directive and Red/Amber listed species in Birds of Conservation Concern in Ireland and be limited to suitable geographical areas.

In the short term, we would advocate the adoption of one new pilot project, aimed at the conservation of breeding waders on machair grasslands in the north-west. It is our

understanding that FPS prescriptions for breeding waders are being developed by DoEHLG for certain SPAs and we would advocate the adoption of these when they become available. However, in the meantime, this is a unique opportunity for the Department to take the lead on an initiative to protect and enhance key species in the wider countryside. A draft pilot project is outlined in Annex 1, which is based on Northern Ireland's Department of Agriculture and Rural Development Country Management Scheme, Breeding Wader Sites Option. The prescription outlined is an initial draft for consultation.

Areas of improvement: biodiversity

17 Planting new hedgerows; Coppicing of hedgerows; laying hedgerows; appropriate hedgerow management

Hedgerows have the potential to impact positively in terms of all of the specific "challenges" of the new scheme

Climate change - estimating an average hedgerow width of two metres, hedgerow covers an approximate area of 764 square km and plays a role in meeting Ireland's obligations under the Kyoto Protocol.

Renewable energies – hedgerows can provide a regular supply of wood - a carbon neutral fuel source

Water management - the root systems of hedgerows slow the movement of water through the landscape, absorbing nutrients, thus reducing the risk of pollution, whilst also reducing the potential for flooding. They also stop sediment from moving down-slope, preventing excessive siltation in waterways.

Biodiversity - hedgerows are often the only significant wildlife habitat on many farms. The network of hedges across the country provides links between surviving fragments of other wildlife habitats, thereby allowing the movement and dispersal of species through agricultural landscapes. This network is thus vital to the conservation of much of our native flora and fauna.

Assessment of Suitable Hedgerows for Coppicing and Laying

Hedgerows selected for rejuvenation work should be carefully assessed and the appropriate management activity specified.

Research indicates (McAdam et al., 1994) that, in the short term, laying has a greater positive impact on biodiversity than coppicing, so laying should be seen as the primary

option for rejuvenation. Where laying is not considered a suitable management option or would be too costly then coppicing should be considered.

It has been the experience of our members that not all REPS planners have sufficient knowledge / experience to distinguish between hedges suitable for laying, those where coppicing is the most appropriate option and those where rejuvenation is no longer appropriate. Members have been asked to lay hedges which have only been suitable for coppicing and know of hedges which have been coppiced where laying, in our opinion, would have been the appropriate management option.

Unless there are specific conservation or management objectives, resources should not be directed into hedgerows that form part of redundant field boundaries. Conversely, ancient, species rich, and other notable hedges should be prioritized for management.

Costing

The structure of payments to farmers in respect of the cost differential between the different management activities should not be such as to result in a *path of least resistance* approach to hedgerow management.

The costing of the three different management activities should reflect the market cost of carrying out the activity. Costing can be particularly difficult in the case of hedge laying which can vary significantly in the cost per metre dependent on a number of factors. A cost-based system (up to maximum per metre limit) based on a number of quotations would be the fairest way of achieving this.

Management Standards

The specifications for REPS4 "*Specification for REPS Planners in the preparation of REPS 4 plans*" recognise the need for hedgerow management works to be carried out by qualified personnel;

"Hedgerow maintenance/rejuvenation should be carried out by operators certified as being proficient in such operations. E.g. FETAC Competence in Mechanical Hedge Cutting award."

This requirement for hedgerow management works to be carried out by competent personnel should be carried through to the new scheme.

The specifications for the new scheme need to state what type and level of certification is required / acceptable for each aspect of the Scheme. Inspectors, Planners and Farmers need to be aware of the standards involved.

The Pillar would recommend that

- Hedge laying should be to National Proficiency Test Council (NPTC) (UK) Standard (AO20) or equivalent.
- Coppicing of hedgerows should be carried out to standards currently being developed by the Coppice Association of Ireland in conjunction with Standards bodies in the UK.
- Planting of new hedgerows should be to NPTC standard or equivalent.

The Department needs to outline how they propose to monitor compliance with these criteria.

Aftercare

The design and monitoring of the new Scheme should include the need for appropriate aftercare for rejuvenated hedgerows.

Monitoring

Baseline recording should be made of all hedgerows which qualify for payment under the new scheme prior to the commencement of any management activity.

Hedgerow management activities should be based on defined objectives – improvement of hedge structure, reduction of level of gappiness, etc.

Effectiveness of the scheme can then be based on measured criteria.

A Hedgerow Sub-Group of the Woodlands of Ireland initiative is in the process of developing “favourable condition” criteria for Irish hedgerows.

New Hedgerow Planting

The results from 14 County Hedgerow Survey Reports carried out since 2004 indicate a lack of quality in the existing hedgerow resource. On average, only 18% of hedges recorded as part of the surveys meet five basic criteria from the UK Hedgerow Habitat Action Plan Favourable Condition criteria (no current Irish standard). Gappiness is this main reason that hedgerows fail to meet these criteria. In light of this we feel that the new scheme should prioritise the renovation and restoration of existing hedgerows over the establishment of new hedges. Given that the existing resource is not in optimum condition there needs to be sound justification for adding to the resource. New hedges take time to become of high value for biodiversity compared to the renovation of existing ones.

New hedges should only be considered where there are specific conservation objectives.

New planting of hedgerows should include precise specifications for

- Ground preparation
- Species composition in % terms (including provenance)
- Plant spacing
- Weed control
- Fencing
- Aftercare and formative maintenance

One of the key factors in the biodiversity potential of new native species hedgerows is in the provenance of the planting material. Plants of native (preferably local) provenance are more suitable for the protection of wildlife and enhancement of the landscape. Thousands of years of adaptation have resulted in native trees becoming well adapted to local conditions and synchronized to the local ecology.

In REPS4, under Biodiversity Option 5C, New Hedgerow Establishment the Departments “Specification for REPS Planners in the preparation of REPS 4 plans” states that

“In order to conserve Ireland’s genetic biodiversity the species selected should originate from suitable indigenous sources of native seed.”

Scheme monitoring needs to include mechanisms for ensuring that native (local) provenance plants have been used. This is best achieved through the introduction of a “Certificate of Provenance” similar to that used in the Forestry sector.

Payments for hedgerow planting and management

Farmers to be paid not per metre of hedgerow planted but according to the quality and management of the hedgerow. Poorly managed hedges often do not have as high of a biodiversity value as well managed hedges. Therefore this measure must set a minimum defined quality standard for work carried out under the measure. The agri-environmental scheme should also provide training for farmers and other interested individuals who intend carrying out hedgerow planting and management, so that they are sufficiently informed and capable to rejuvenate hedgerows in a manner that maximises the potential for maintaining and improving biodiversity. Numerous aspects of conservation farming are relatively new to many farmers and there is a limited skill base with which to implement agri-environmental programmes to best practice standards.

- Many of the hedges planted under REPS use non native provenance quicks which reduces their wildlife benefit. All hedges planted under the new schemes need to be planted with plants of Irish seed provenance.

- Many of the hedges planted are so poorly planted that they often do not take or die completely. This is a waste of resources and again points toward the need for greater quality control and training provision.

Current quality control of hedge management is weak and should be strengthened. Heavy penalties should be leveled at farmers and their contractors who: trim hedges out of the NPWS season; use cutting blades that are not maintained; or cut with a flail i.e. chains which run along a pto unit should be curtailed if not banned as the practice damages growing buds of hedge plants by ripping stems and apical or growing buds.

Incentives should be made available to: Lay and, where necessary, coppice hedges, leave buffer zones (2 metre herbaceous zones between hedge and productive field); manage hedges appropriately including side trimming where and when suitable, infilling of gaps along hedgerow length; planting / retaining trees.

Promotion. The importance and value of a healthy hedge with associated features (hedge bank, verge, and drainage ditch), both for environment and economic value for farmers should be highlighted in documentation. E.g.: shelter for animals and crops, landscape value, the economic value of pollinators and insectivorous bird species.

Areas of improvement: water quality, biodiversity, climate change (mitigation and adaptation), resource management

References are available at appendix II

18 Tree planting

The suggestion of 20 trees per acre for landholders not partaking in afforestation is to be commended. If this is to be successful there will need to be clear guidelines for where to plant and good planting and aftercare management. In the case of this agri environment scheme, where biodiversity is one of the key objectives, the planting should be of native species only. 20 oak saplings planted solitarily on their own in a field not fenced off will just be continued fodder for stock. Similarly 20 hazel saplings planted in a cornice may provide some cover but don't necessarily do much to achieve our aspirations of long term carbon sinks and improvements in biodiversity.

Guidelines for planting shelter belt type areas with a mixture of over and understory species which are fenced off to provide buffer zones should be provided. It will also be necessary to quantify net benefit in terms of crop yields and stock weight gains such shelterbelts provide. (This is the way such schemes are sold to farmers in Australia who do all plantings on a voluntary basis as no such subsidies are provided).

Tree planting should be designed to provide biodiversity and added value.

Planting design and species selection would be site-specific and would also involve companion planting whereby some species can benefit each other.

There needs to be specific encouragement of agro forestry projects which offer diversification with added value. These will involve planting a mixture of trees and shrubs selected for both biodiversity value and for timber, fruit and nuts. This will be planting in combination with other crops (vegetables / grain / herbs) or with chickens, geese or cattle grazing and will be more than 10 trees per hectare - also, perhaps a high density shelter belt will be required.

Native species would be preferable, but a few non-natives such as Sweet Chestnut, Walnut, Cob Nut and various fruit trees could be included.

Area of improvement: water quality, biodiversity, climate change

20 Rough moorland grazing

The Agri-Environment Scheme should recognize the need for linkages between protected areas. To this end it should initiate the creation of wildlife corridors through commonages which would link protected areas.

See appendix I "Rationale for a Wildlife Web" for further information.

Area of improvement: water quality, biodiversity

Additional Actions

21 Nitrates

Landholders taking part in the Agri-Environment Scheme should not be permitted to spread nitrates. The damage to waterways and underground aquifers from excessive nitrates is known but ignored by all. What is not known but very likely and equally disturbing is the long term damage to decomposers such as worms in the soil from nitrates

Areas of improvement: water quality, biodiversity, resource management

22 Climate change adaptation

This is for farms that are situated on/near habitats that provide ecosystem services such as wetlands, floodplains, peatlands, woodlands, mudflats, coastal areas etc.

This measure is to provide payments for sustainable climate change adaptation through 'soft' measures by restoring and investing in ecosystem services which can buffer the impacts of climate change. Not only will farmers be most vulnerable to climate change impacts such as floods and droughts, but they can also play an active role in climate change adaptation through adequate land management and thereby not only provide a

service to their lands, but to wider society as well as lessen the impact of to climate change. This measure will also aid the biodiversity objective, as one of the major threats to biodiversity is the predicted impact of climate change.

Climate change adaptation must be an integral part of the new agri-environmental scheme, allowing payment to farmers for any land management undertakings for the adaptation to the impact of climate change. Investment and utilisation of ecosystem services must be at the heart of such an additional measure in the new Agri-Environment scheme

Example: Restoration of wetlands and coastal habitats for the predicted increase of floods due to climate change

Ireland's new agri-environmental schemes should support the restoration of wetlands and coastal habitats as a climate change adaptation mechanism for farmers to adapt to the predicted increase in prolonged and intensified floods in Ireland. Changes in land use and land management should be financially supported to allow an increase of water storage both at the field and catchment level, but only where this contributes to biodiversity objectives, such as water meadow creation. The measure should offer land management options which improve soil structure and infiltration, and preserve or re-create wetland habitats, moorland, heathland, bogs and wet woodlands. At the coast, measures should encourage the re-instatement of natural buffering against coastal erosion by offering options for the restoration of saltmarshes and associated inter-tidal habitats.

Areas of improvement: biodiversity, climate change

Appendices

Appendix I – Rationale for a Wildlife Web

Existing conservation areas have typically been established over time in a piecemeal, ad hoc way to protect specific endangered species or habitats rather than through a systematic process taking into account the full range of species, habitats, and ecological processes that comprise regional biodiversity. The result is an archipelago of conservation areas that not only fail to contain the full spectrum of biodiversity, but that are also isolated from one another within a human-dominated landscape. Because of this isolation, conservation areas are often cut off from ecological processes, such as dispersal or migration, that normally serve to maintain species populations in a given location, so that over time the very species and habitats that were the original reason for establishing conservation areas may suffer serious declines in numbers, area, or health. Developing linkages or corridors of natural vegetation between existing conservation areas has the potential to not only provide a pathway for dispersal, migration, pollination, and other ecological processes that are critical to maintain biodiversity within conservation areas, but also the potential to be designed in such a way that the corridors themselves incorporate additional habitats and species in addition to those present in existing conservation areas so that overall regional biodiversity is better represented and protected within the web of linked conservation areas.

On the ground, the designation and commissioning of protected areas may encounter misunderstanding, ignorance, and outright resistance. Hence, advancing the idea of a wildlife web entails generating a compelling vision and language which would promote a fuller participation in the conservation of Ireland's biodiversity amongst planners, stakeholders, and the public.

Appendix II – References for Action 17

Author	Title	Publisher
Aulino Wann & Associates (2009)	"Hedgerow Survey of County Donegal"	<i>Donegal County Council</i>
Department of Agriculture and Food (2007)	"Specification for REPS Planners in the Preparation of REPS4 Plans"	
Foulkes, N. (2006a)	"County Kildare Hedgerow Survey Report"	<i>Kildare County Council, unpublished report</i>
Foulkes, N. (2006b)	"County Longford Hedgerow Survey Report"	<i>Longford County Council, unpublished report</i>
Foulkes, N. (2006c)	"County Leitrim Hedgerow Survey Report"	<i>The Heritage Council, unpublished report</i>
Foulkes, N. (2007)	"County Mayo Hedgerow Survey Report"	<i>Mayo County Council, unpublished report</i>
Foulkes, N. (2008a)	"County Sligo Hedgerow Survey Report"	<i>Sligo County Council, unpublished</i>
Foulkes, N. (2008b)	"West Kerry / Dingle Peninsula Pilot Hedgerow Survey Report"	<i>Kerry County Council, unpublished</i>
Foulkes, N. and Murray, A. (2005b)	"County Roscommon Hedgerow Survey Report"	<i>Roscommon County Council</i>
Foulkes, N. and Murray, A. (2005c)	"County Westmeath Hedgerow Survey Report"	<i>Westmeath County Council</i>
Foulkes, N. and Murray, A. (2005d)	"County Offaly Hedgerow Survey Report"	<i>Offaly County Council, unpublished report</i>
Foulkes, N. and Murray, A. (2005e)	"County Laois Hedgerow Survey Report"	<i>Laois County Council, unpublished report</i>
Foulkes, N. and Murray, A. (2006)	"A Methodology for the recording of hedgerow extent, species composition, structure and condition in Ireland"	<i>Tearmann, 5, 75-89</i>
Fuller, J. (2006)	"East Galway Hedgerow Survey 2006"	<i>Galway County Council unpublished report</i>
Giorria Environmental Services (2006)	"County Cavan Hedgerow Survey"	<i>Cavan County Council unpublished report</i>
Lyons, M. and Tubridy, M. (2006)	"A Survey of Ancient and Species Rich Hedgerows in Dublin City"	<i>The Heritage Council</i>
McAdam, J.H., Bell, A.C. and Henry, T. (1994)	"The effect of restoration techniques on flora and microfauna of hawthorn-dominated hedges"	<i>in Hedgerow Management and Nature Conservation, edited by Watt and Buckley</i>