An Chomhairle Náisiúnta Eacnamaíoch agus Shóisialta
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The Burren Life Programme: An Overview

Research Series

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National Economic & Social Development Office NESDO

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Dr Brendan Dunford

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Abbreviations

AEOS
Agri-Environment Options Scheme

AES
Agri-Environment Scheme

BFCP
Burren Farming for Conservation Programme

BLP
Burren Life Programme

CAP
Common Agricultural Policy

CSO
Central Statistics Office

DAFM
Department of Agriculture, Food and the Marine

EC
European Community

EU
European Union

GLAS
Green Low-carbon Agri-Environment Scheme

GPS
Global Positioning System

HNV
High Nature Value

IFA
Irish Farmers' Association

LLAES
Locally Led Agri-Environment Schemes

LU/ha
Livestock Units per Hectare

NMS
National Monuments Service

NPWS
National Parks and Wildlife Service

OFS
Organic Farming Scheme

RBAPS
Results-Based Agri-Environment Schemes

RD
Rural District

RDP
Rural Development Programme

REPS
Rural Environment Protection Scheme

SAC
Special Area of Conservation

UCD
University College Dublin

Introduction

The Burren Life Programme (BLP) has received much positive attention for its success in engaging Burren farmers and institutional and civic stakeholders in delivering tangible social, economic and environmental dividends for the Burren through an innovative, performance-based delivery mechanism. This overview traces the evolution—over almost 20 years—of the BLP in order to tell the full 'story' of this locally led programme, to extract key learnings and to discuss how these learnings might inform other regions and other actors in the arena of agri-environmental stewardship. In particular, the overview is intended to inform the commissioning authority, NESC, in supporting innovation in agri-environmental policy and practice in Ireland.

The structure of this paper follows a logical flow: the main phases of the Programme's evolution are described (Initial context, Research Phase, Roll-out Phase), followed by a discussion and some conclusions which look at some of the lessons learned and how they might be integrated into policy.

The author has been directly involved in the BLP through its various incarnations since 1998—initially as a student, then as an independent consultant, then as a project manager and currently as programme manager, while always based in the Burren. However, this overview draws on feedback from a range of actors and research sources, making every attempt to be deliberately objective in its account and analysis.

With thanks to Dr Sharon Parr (BLP) and Ms Elaine Williams (Burrenbeo Trust) for reviewing, and to Michael Davoren (Burren IFA) for information and clarifications.

Section 1: Initial Context (1990s)

It could be said that at least some of the seeds of the current Burren Life Programme (BLP) were sown two decades ago with the introduction of the Rural Environment Protection Scheme (REPS) and the designation of much of the Burren as a 'Special Area of Conservation (SAC)' under the EU Habitats Directive. These major interventions subsequently led to the formation of the Burren Irish Farmers' Association (IFA) group (with the blessing of the national IFA organisation), which sought to collectively address what they as Burren farmers considered to be inappropriate measures under REPS, as well as the perceived unfairness of the manner and implications of SAC designations. This Burren IFA group successfully negotiated with Government Departments to secure a Burren REPS agreement, one of the conditions of which was a requirement for further research. Burren IFA, to their credit, were conscious of the opportunities and not just the challenges implicit in SACs and REPS and therefore lent their support, along with Teagasc, National Parks and Wildlife (NPWS) (then Dúchas) and University College Dublin (UCD), for a project to explore the broader relationship between farming and the Burren. This project then fed into a five-year EU LIFE-funded project, which in turn fed into the BLP. It is therefore useful and instructive to describe the situation in the Burren in the mid-1990s and the circumstances that led to these early seeds being sown.

During the decades following Ireland's accession to the EEC in 1973, the relationship between Burren farmers and their landscape changed in a way that was unprecedented in terms of its speed, scale and impact. This was encouraged by a range of factors including the Common Agricultural Policy, which offered grant aids and subsidies designed to improve the lot of the Irish farmer, while also ensuring food security for the consumer. Major changes were enabled by new agro technologies—cattle breeds, heavy machinery and agrochemicals—as well as technical support from farm advisors. For many farmers, these were welcome developments, ways of improving their lot: according to O'Rourke (2005) 'the reclamation, or reclaiming from nature, of Burren land in recent years is invariably seen by the farming community as a sign of progress.' Such progress in improving farm output is confirmed in a study by Dunford (2001), which estimated that stocking levels in the Burren increased from 0.379LU/ha in 1970 to 0.655LU/ha in 2000, a 72.8 per cent jump over 30 years.

The impact of this reclamation on the Burren's natural and built environment was also very significant. During this time it is estimated that approximately 30 per cent of the Burren's archaeological sites were lost due to land reclamation (Hickie, cited in O'Rourke, 2003). Drew & Magee (1994) report that between 1981 and 1991, 3.65 per cent (1,371ha) of their study area in the Burren was reclaimed, with 70 per cent of this described as the 'wholesale clearance and levelling of terrain which may have been thick scrub or limestone pavement.' Drew (1996) estimated an accelerated reclamation rate in the mid-1990s of 170.67ha per annum.

The use of fertilisers also increased greatly over this time—a threefold national increase in nitrogen occurred in Ireland from 1973 to 1995. *The Irish Farmers Journal* even reported on an experiment to fertilise parts of the Burren via helicopter. All of this raised real concerns of nutrient leaching to oligotrophic lakes, turloughs and groundwater. Reclamation and increased fertiliser and slurry usage in turn enabled a massive increase in the production and use of silage as a

supplementary feedstuff, produced in the lowlands but often fed-out on upland grasslands ('winterages'). Again the environmental impact was very significant: increased risk of water pollution and soil erosion, as well as greater levels of undergrazing, and thus species loss, on upland grasslands as the natural grassland forage was partially or totally displaced by the introduction of silage.

Over these decades of change, farmers also became more specialised. Previously mixed farming systems were replaced by suckler beef systems, while livestock breeds and types also changed to meet market demand, e.g. for less marbled meat, and to optimise subsidies, e.g. suckler cow scheme. These changes required further management responses, e.g. more supplementary feed. Farm holdings were consolidated and management became more efficient, numbers employed in agriculture dropping by 52.2 per cent between 1970 and 1996 in Ballyvaughan rural district (RD) in the north-west portion of the Burren. The loss of people from the land also contributed to major environmental impacts with a greater focus of activity on the more mechanically accessible lowlands upland fringes, resulting in the attendant threats of over-intensification. Conversely, the reduction in labour, especially herding, on less accessible uplands, led to reduced grazing levels and contributed to the accelerated encroachment of scrub (Parr *et al.*, 2006) and loss of biodiversity.

By the late 1980s, public concern at environmental degradation and over-production (milk lakes and butter mountains) across Ireland and Europe, as well as other budgetary, political and free trade concerns, led to a rethink in agricultural policy and the introduction of a raft of measures to achieve a more sustainable approach to food production, including the decoupling of payments from production. The EU Habitats Directive was transposed into Irish law in 1997, leading to the designation of SACs, a move that set out to, and succeeded in, halting significant land reclamation work in these areas. In 1994, the first national Agri-environment scheme, known as REPS, was introduced, which, among other things, compensated farmers for compliance with SAC restrictions. Dunford (2002) describes this sea change in Burren farming: 'through REPS, for the first time ever, farmers are being asked to move beyond their production-orientated mentality and embrace measures that give conservation of the environment precedence over agricultural production. Such a radical shift in perspective will surely take time to sink in.' Indeed, SACs and REPS were not always greeted positively by local farmers, for a number of reasons.

In most cases, Burren farmers were officially notified of the SAC designation through the post, receiving a list of activities on their land that would henceforth require ministerial consent. This caused great upset in some quarters. A report by the Consultative Committee on the Heritage of the Burren (2000) found that farmers were 'bewildered and some angered by the lack of proper consultation before their lands were lumbered with SAC categorisation.' O'Rourke (2003) described the 'strong criticism' by local farmers of the 'top down autocratic approach' with 'no prior consultation with the landowners' and plans 'designed solely on "the best scientific grounds"'. The study goes on to say that 'Burren landowners frequently complained about their inability to contest the designation, because it can only be done on "scientific grounds"—which they feel puts them at a distinct disadvantage.' It is further noted that 'given the history of the land struggle in County Clare and throughout Ireland, the imposition of legally binding restrictions

on how landowners use their land is naturally quite emotive, even if they are once more given some financial compensation.'

According to the same study, 'locally the SACs were sometimes referred to as a new form of Landlordism. There is resentment of "newcomers"', essentially urban environmentalists, posing as the custodians of the place and the guardians of its nature' and also that 'the locals are back to feeling peripheral and helpless, and express sentiments such as: ''they [the government] want us out of here and to turn the place into a wilderness for the tourists, they want to close down the countryside" (interview data), whereas all the locals want is to get 'our land back.' The study concluded that 'the SAC designation cannot really be effective, because it reflects solely expert knowledge, and ignores the tacit knowledge of the traditional managers of this landscape, who have over the years co-created its "nature"' (O'Rourke, 2003).

Similarly, with the introduction of REPS, Burren farmers were very frustrated at the one-size-fits-all approach, which, they felt, didn't sufficiently accommodate the unique circumstances of the Burren. Furthermore, in a survey by Dunford (2001), respondents complained about how under REPS they were no longer 'the boss' on the farm, and they now felt more like 'the employee than the employer.' Others expressed a sense of a loss of pride from being so dependent on 'the cheque in the post', rather than relying on their own skills in land management and livestock husbandry. One respondent felt that farmers had 'sold their souls.' Another, different, concern was the actual environmental impact of REPS: a study by Bohnsac and Carrucane (1999) found that REPS was not sufficiently 'strict, specific and proactive to meet the legally-binding objectives of SAC-designated land, a purpose for which though it was not originally intended, it appears to be used.' The same study noted that 'Blanket prescriptions for grazing periods and feeding regimes in the Burren uplands do not take sufficient account of the wide diversity of farming situations in the Burren' and that there was 'a lack of incentives and a proactive approach to extensification.' Dunford (2001) found that some farmers actually blamed stocking and grazing restrictions under REPS for the expansion of scrub on their holdings, while there were several reports of farmers 'tidying up' holdings and causing damage before joining REPS.

Adding to the mixture of growing farmer angst arising from national issues such as SACs and REPS was a local dispute around the construction of a visitor centre in the central Burren at Mullaghmore. This long-running saga (entailing a ten-year legal battle) caused huge division and bitterness in the community and deepened resentment against the role of what were seen as outsiders and outside 'ideas.' O'Rourke (2003) stated 'The outsiders were presented as environmentalists, academics, urban yuppies and misfits who were only concerned with the environment and the aesthetics of the landscape, rather than the communities who had to make a difficult living there.' Terms such as 'environment', 'conservation' and even 'Burren' (which had limited local currency to begin with, as local people often relate more to their parish than to the Burren) were seen by many as having quite negative connotations. Many farmers erected 'No trespassing' signs on their land and overall there was a 'rawness' and sensitivity within the community.

As a result of these and other issues, it is reasonable to say that by the late 1990s there was much concern, negativity and division regarding the Burren and its

management. Certainly the 'balance' between farming and the Burren seemed to have been upset by a number of, mainly external, factors and, as a consequence, the Burren's environmental health had deteriorated significantly, with neither SAC designations nor REPS proving fully effective in addressing this. The public's perception of the role of farming in the Burren had also grown very negative, while farmers themselves were feeling very embattled and disrespected.

Against this backdrop, Burren IFA was established, a coming together of farmers from nine local parish branches of the IFA, initially in direct response to the perceived inappropriateness of the REPS guidelines in the Burren. These guidelines included a cessation of silage feeding on SAC areas and a reduction in livestock numbers; guidelines which many local farmers felt were unworkable and unfair. Coming together as Burren IFA was an attempt by these Burren farmers to get a seat at the negotiating table, rather than having others negotiate on their behalf. The approach was successful as the Burren IFA group negotiated the 'Conditions for the Conservation of the Burren to be applied under REPS' in November 1995. This included a number of important concessions that made it possible, and attractive, for Burren farmers to enrol in the scheme. This early success, including the group's ability to bring a Minister to the Burren and negotiate at high levels with public officials, instilled confidence and belief in the group and its potential.

Under the new Burren REPS Agreement, it was stated that 'research and monitoring of the Scheme, by studying the effects of REPS practices on member farms, and using adjacent non-REPS farms as controls, is deemed essential. These effects should include those of an environmental, agricultural, and socio-economic nature, and results should be used to modify the above-listed conditions' (Department of Agriculture and Food, 1995). To achieve this, local representatives of the Burren IFA, Dúchas (now NPWS) and Teagasc made a successful application for a Teagasc Walsh Fellowship into the 'Impact of Agricultural Practices on the Natural Heritage of the Burren', with UCD (faculty of Agriculture) offering academic support to the project.

Section 2: Research Phase (2000–2010)

A number of significant pieces of research took place in the Burren during the early 2000s. This body of research—ecological, sociological and agricultural, theoretical and applied—helped to identify some of the key environmental challenges facing the Burren and its farmers, identified the limitations of existing management approaches, and also suggested some potential solutions through which the key challenges could be addressed. It also helped to reframe the relationship between farming and the Burren in a much more positive light and helped identify areas of common ground for local and regional stakeholders. As such, this period of research laid substantial foundations for later success of the BLP.

The Walsh Fellowship-funded study commissioned by Teagasc, UCD, Burren IFA and NPWS in 1997 culminated in 2001 with the submission of a PhD thesis on 'The Impact of Agricultural Practices on the Natural Heritage of the Burren' (Dunford, 2001). The research traced the evolution of the relationship between farming and the landscape of the Burren over the past six millennia, looked closely at traditional management practices and culminated in a detailed analysis of the impact of various grazing regimes on plant species diversity, using extensive botanical and land-management surveys. In addition, a survey of local farmers was carried out to identify existing, and likely future, trends in Burren farming, to explore attitudes to the land and its management (with a particular focus on REPS) and to identify issues that encouraged or discouraged farmers to engage with such programmes. In effect, the research amounted to a much needed, and more inclusive, 'retelling' of the story of farming and the Burren and its impact on the natural heritage of the region, from its Neolithic beginnings six thousand years ago right up to the present day.

Key research findings included:

- The importance of traditional grazing practices such as winter grazing for the biodiversity of the Burren, with an acknowledgement that such practices are complex and vary from farm to farm and from year to year, thus requiring flexibility in their interpretation and application (e.g. under REPS);

- The changing relationship between farming and the Burren, typified by the particularly serious threat posed by 'modern' practices such as silage feeding, and the urgent need to research alternative feeding systems;

- The increased level of undergrazing of upland grasslands and the consequent encroachment of scrub, a trend that seemed, based on Central Statistics Office (CSO) agricultural census and farm survey data, likely to accelerate, with the consequent need to explore the most appropriate and effective methods to remove this invasive scrub;

- The limitations of quite restrictive SAC designations and national schemes such as REPS in addressing the Burren's unique management, and by implication the need for a locally targeted, proactive approach;

- The prevailing feeling among farmers that they were being ignored when deciding on the future of the Burren and also their appetite to be actively involved in management planning for the region;

- The urgency for action needed to tackle recent land-use changes, given the high cost and relatively poor impact of a more reactive approach to these changes (e.g. incentivising grazing now vs scrub removal later);

- The need for increased levels of awareness-raising, education and training beginning with, but by no means confined to, the Burren community who are at the coalface of conservation efforts in the region.

The study explored some of the reasons why SACs or REPS did not, and probably could not, adequately meet the needs of the Burren and concluded by stating that 'Perhaps a more effective way to address some of the outstanding needs of the Burren is through more direct, low-key, practical initiatives, which actively involve the local community' and called for practical research into new feeding systems, appropriate grazing levels and methods of scrub removal, as well as the establishment of demonstration farms. These proposals echoed an earlier call by Bohnsac and Carrucane (1999) and were later (2004) incorporated into the application for funding of the Burren LIFE project (see below).

The subsequent publication in 2002 of the PhD research in book form, *Farming and the Burren,* launched by the Minister for Agriculture in the Burren at an event attended by large numbers of farmers, really enhanced the sense of 'ownership' by farmers of the research. By publicly 'giving them back' their story, this book helped farmers to feel part of the solution as opposed to part of the problem. On the final page of the book, in a section on future strategy, there is a call to support Burren farmers 'through research, education and income to ensure that their critical role is upheld and strengthened' while also challenging farmers 'to deliver in a proactive fashion, fulfilling their potential as custodians of the countryside, and meeting the attendant challenges head on as we know they are singularly capable of doing' if they are to continue to justify the 'high levels of public expectation and continued financial support' (Dunford, 2002). Among farmers, the research findings were broadly welcomed as they offered, as farmers saw it, 'scientific credibility' to many of their own opinions on the management of Burren grasslands—for a change, farmers felt that the science was on their side. They welcomed, for example, the questioning of the severe penalties that applied under REPS for light summer grazing despite its 'neutral or sometimes positive impact on floral diversity' as well as the call for greater flexibility and farmer input into such schemes.

The publication of this research and the positive response of farmers also helped to confirm to other bodies, such as the NPWS and Teagasc, the benefits of working more closely and positively with farmers, and indeed confirmed the appetite of these farmers and their organisation to, in turn, engage more closely in the pursuit of shared values. This echoed a call in the last line of the book that 'all parties involved in the day to day management of the Burren must take up this new challenge, re-evaluate their role, leave the baggage of the past behind and look to the future with renewed hope and vigour' (Dunford, 2002). This budding partnership between the agricultural and conservation sectors arising from the

initial research was critical to the subsequent success of the application for EU LIFE project funding and ultimately in the success of the project itself.

Almost as important as the research findings was the methodology employed in carrying out the work. It was conducted by a locally 'embedded' student over several years during which a great deal was learned about the essence of the Burren and its community, acquiring knowledge and building relationships, which, according to O'Rourke (2001) 'is vital when it comes to interpreting the dialogue of both the landscape and its people.' This was particularly important when it came to farmer surveys: the slow, local approach allowed relationships of trust and respect to develop and encouraged farmers to have their say in a more open, honest and natural way than would have been possible through, for example, public meetings, anonymous surveys or through time-constrained negotiations with scientific experts and public bodies.

Another important consequence of the PhD research was the establishment in 2002 of Burrenbeo Teoranta (later to become the Burrenbeo Trust), which employed what was, at the time, 'new media'—a website—to tell the story of the 'living Burren' to an online community within, and far beyond, the Burren. At this time it was clear that 'many representatives of local, regional and state management bodies, visitors and even well intentioned "conservationists" remain hopelessly oblivious to the important role that farmers play in protecting and contributing to the Burren's heritage, and of the constraints within which these farmers operate. This is a situation that needlessly stifles real co-operation and development' (Dunford, 2002). Similarly, at a local level, the author found that 'there remains a critical lack of awareness among many farmers of the resource that they are being paid to protect, of its significance and of the subtleties involved in its management', echoing findings by O'Rourke (2001) that suggested the local communities had not taken ownership of their own heritage; that this story was effectively 'owned' by scientists, academics and 'outsiders.' For example, according to the survey by Dunford (2001), very few farmers or their children ever learned about the Burren in school, unless they happened to have an enlightened teacher with a personal interest.

Since its launch in 2002, again attended by a large number of farmers, Burrenbeo (www.burrenbeo.com) has helped to reshape the narrative around the Burren from a rather elitist, academic-led perspective to one that celebrates local people, place and tradition, 'opening eyes to the living Burren.' Burrenbeo also took this message into local schools through the Eco-Beo programme, a 20-week, 10-module course on local heritage and stewardship, from which over 1,200 young Burren 'experts' have graduated, many of them the sons and daughters of local farmers. Burrenbeo has also helped engage the broader Burren community through monthly walks and talks, volunteering events and festivals, including the Burren Winterage Weekend, which is a unique celebration of the rich legacy of pastoral farming in the Burren. The degree to which Burrenbeo Trust, a local Environmental NGO, has complemented the farmer-focused work of the BLP cannot be underestimated, helping as it has to align stakeholders' perspectives and ensuring a more integrated and co-operative approach to addressing management challenges in the area.

The research by Dunford (2001) and the relationships and attitudes that flourished through the various publications and initiatives listed above, were the catalyst for

an application in 2004 for funding from the EU LIFE Nature fund, a fund dedicated to the sustainable management of SACs across Europe. The application was made at the instigation of the NPWS, with Teagasc and Burren IFA coming on board as paying partners. To these stakeholders, the application seemed like a logical follow-on to further the research needs identified in the PhD project using one of the few available funding sources at the time. Seed funding was provided by the Heritage Council to assess the viability of the application and the application itself was funded by NPWS. The project application's stated objective was to develop a blueprint for the sustainable agricultural management of the Annex I habitats of the Burren. Its approach was simple: to implement a range of management interventions across a selection of working farms in the Burren and to monitor the agricultural, economic and environmental impact of these interventions. The funding application was successful, as was the subsequent (2005–2010) €2.23m project that won a 'Best of the Best' award from the EU LIFE Nature unit in 2010. Fundamental to this success was the partnership approach and the clarity and originality of the proposal that built on the foundations provided by the previous research.

The ultimate goal of the Burren LIFE Project was to research, develop, test and communicate a new, integrated system for the agricultural management of the Burren in order to secure a bright future for its people and their heritage. The project application listed the main threats, including land abandonment, undergrazing, pollution, supplementary feeding, inappropriate grazing regimes, reduced human intervention and loss of management knowledge, etc., proposed actions (36 in total) to address these threats, and listed expected results from applying these actions on 2,000ha (later 2,500ha) of SAC land in the Burren. While the bulk of funding was provided by the EU (75 per cent), NPWS as project applicant contributed approximately 17 per cent of the costs, Teagasc 8 per cent and Burren IFA a smaller but significant (guaranteeing a stake in all decision making) approximately 1 per cent.

A team of four people were recruited for the five-year project. Continuity between the project and previous work was enhanced by the appointment of four locally based staff, some with extensive research experience in the Burren. This continuity allowed the team, and the project, to get off on the right foot, with a good level of trust and credibility. Also of great significance in this regard was the refurbishment of a former schoolhouse in the central Burren village of Carron as a base for the project, a move that visibly placed the project at the heart of the Burren farming community. This move was made possible by the intervention of a local development group with close ties to Burren IFA that was able to secure Leader funding to cover 50 per cent of the (>€100,000) refurbishment costs, while the group themselves financed the 50 per cent balance through personal loans. This was another extraordinary intervention by champions within the local community, which demonstrated great leadership and commitment not only to the project but to the other project partners.

As well as a large number of conservation works on the 20 project farms (2,500ha), project outputs included:

- A set of best-practice guidelines for use by farmers, on the themes of: farming for conservation (general), sustainable grazing regimes, feeding systems and the removal of invasive scrub from Burren winterages;

- A costed menu of conservation actions and equipment—from stone-wall repair to water provision, scrub removal (using a range of effective techniques) to gate installation to access provision;

- Monitoring data and reports on the environmental, agricultural and economic impact of the project actions on the 20 monitor farms, of great relevance to the broader application of these actions on other farms;

- Strong support from all stakeholders, in particular farmers, for the project and its findings as well as excellent working relationships and goodwill between all parties involved;

- Simple management recommendations, some of which were immediately incorporated into existing agri-environment schemes such as REPS—e.g. reducing restrictions on light summer grazing;

- An 'after-LIFE' plan that detailed a range of actions to carry forward the findings of the project.

The Burren LIFE project itself was essentially an exercise in 'learning by doing'—testing solutions in real time on actual farms. Many of the ideas had been proposed by local farmers but needed to be scientifically evaluated and costed. These ideas were implemented by project farmers on their farms and these farmers also played an active role in monitoring the impact. This was particularly important in gathering data on grazing regimes, information that was used by the project team to ultimately contribute to a doubling in the area described as 'well grazed' over the course of the project. Results were shared with other farmers through demonstration-day events. All of this helped farmers to take ownership of the project, while the move to 'doing' things rather than 'talking' about them was also very important in getting them on board. The project helped to demonstrate what 'conservation farming' looked like and proved that it can in fact improve agricultural efficiency and performance (e.g. reducing input costs and/or increasing stocking levels).

Another important way in which the project appealed to farmers was by striving to be innovative and progressive and not simply reverting to traditional practices. This was best shown in the approach to solving issues around the excess silage feeding on Burren winterages. Farmers felt that suckler cows needed additional pre-calving nutrition that winterages could not provide. Testing of forage values by the project team confirmed this to be the case. Then the project team worked with Teagasc to develop a ration that contained all the cows' mineral needs plus high protein levels. Feeding this at a recommended rate and time obviated the need for silage feeding, as long as there was enough available forage. This new feedstuff (the 'Burren LIFE ration') was milled by Kerry Foods and its testing on the monitor farms was subsidised by the project, and its impact monitored. The project team was soon able to show that this new feeding system maintained animal health and calving

performance, was very cost- and time-effective, made herding more efficient and improved the quality of the winterages. This message was confirmed by the project farmers who tested the feed, leading them to reduce silage feeding levels by 61 per cent over the project, and this convinced many of their peers to switch to this ‘progressive’ new feeding system. Environmentally, this new system reduced localised water pollution and soil erosion while increasing forage uptake and thus improving biodiversity. Other innovations that helped convince farmers that this project was progressive included the use of mechanical brushcutters to control scrub, the use of solar- and wind-powered water pumps and fences as well as the establishment of an (ultimately unsuccessful) ‘Burren beef & lamb producers group.’

Burren LIFE had a very positive impact on most of the 20 monitor farms and on the attitude and engagement of the wider farming community. Extensive media coverage of the project helped convince many people of its success and worthiness. In 2010, Department of Agriculture, Food and the Marine (DAFM) announced €3m in funding over three years to expand the project’s findings across the Burren, leading to the creation the Burren Farming for Conservation Programme (BFCP).

Section 3: Delivery Phase (2010-2015)

In early 2010, during the reporting phase of the Burren LIFE project, and in the midst of a deep economic recession, the Department of Agriculture, Food and the Marine (DAFM), who had been part of the Project Advisory committee and to whom a submission had been made for 'after-LIFE' support, announced their intention to allocate funding for an expansion of the project. The funding source was unusual: Article 68 funding, using unspent Single Farm Payment funds from Pillar I of the Common Agricultural Policy (CAP). The reasons for this decision are not fully known but the strong support of the IFA and other partners, the proven impact of the project, the availability of detailed costings, and the relatively small sum involved (compared to the overall CAP budget) constituted several good reasons for investing in a low-risk, and potentially high-profile, innovative programme. The main stipulation was that this funding could only go directly to farmers, not to administration. Fortunately, the NPWS, who led the Burren LIFE project, announced that they would fund the administration of the BFCP (later rebranded as the BLP) through such a local team, under contract, based in the existing office in Carron. Once again, the continuity of staff and location helped the programme to a strong, and effective, start.

The stated aim of the BFCP, henceforth referred to as the Burren Life Programme (BLP), was to conserve and support the heritage, environment and communities of the Burren (defined in the T&Cs of the programme as an area of approximately 72,000ha). Moving from a research project on 20 farms to a full-blown Agri-Environment Scheme (AES) in a very short timeframe was a challenge, but also a great opportunity to 'start from scratch' and to incorporate the findings and lessons of previous work. A programme structure was developed that built on the local research, focused on delivery of environmental impact and was cognisant of the key role of farmers. The BLP that resulted can be best summarised as a locally led, farmer-centred, results-based, highly adaptive AES. It is a 'higher level' scheme as farmers who are in national programmes such as REPS, Agri-environmental Options Scheme (AEOS) and Green Low-carbon Agri-environmental Scheme (GLAS) can also partake in BLP (with checks made to avoid any double funding). Over six years this innovative approach to programme design, which in effect combines practical local knowledge and science with an innovative delivery mechanism, has delivered a resilient and impactful programme for the region.

Entry to the BLP is on a voluntary but competitive basis. Initially (2010), 340 applications for entry were made, each of which was assessed and rated according to an agreed set of environmental criteria—such as area and proportion of SAC on holding, number of listed monuments, etc. This application process was very useful in highlighting to farmers, in a meaningful way, the positive (previously negative) value of SACs and listed monuments on their land as these now helped them win a place in the BLP. In 2010, 117 farmers were accepted into the BLP, rising to 156 by 2015 (Year 6) over an area of roughly 14,500ha, approximately 50 per cent of the designated land in the Burren. The average annual payment of €6,500 ranges from under €1,000 up to a max €15,000.

How the Programme Actually Works

It is instructive to describe, in general terms, how the BLP works on the ground:

1. The BLP farmer contacts his/her advisor and requests that their farm plan to be drawn up. BLP-approved advisors undertake extensive training including annual refresher courses. These advisors, some of them local, part-time farmers, are paid by the farmer. They are key to the efficient functioning of the BLP and are closely supported by the BLP team. They submit plans for farmers on an annual basis.

2. The farmer and advisor walk the farm (focusing on SAC and other Annex I land) and the farmer suggests a number of works that he/she would like to do to improve the environmental (and often agricultural) condition of the farm. The total cost of the tasks must be within a certain annual allocation that is based on the area of SAC + Annex I habitat on the farm. Each farmer receives annual training and an info pack, and has the support of the local BLP office and advisor in making all decisions regarding work selection.

3. If the advisor feels these jobs will deliver environmental benefit, he/she will map them (using handheld GPS) then, later in the office, will estimate the cost of each task and map it on an ortho and map of the farm. Advisors use the eREPS mapping system to map jobs and a menu of costs supplied by the BLP office to estimate costs. For scrub work, a calculator is used to estimate cost—the advisor needs to input area (using GPS), estimated scrub cover (on-site estimate) and technique to be used, to generate a cost for each job.

4. While still on the farm, the advisor will walk every field on the farm that contains species-rich grasslands and, using a one-page, nine-point field sheet, record data relating to the environmental health of each eligible field. This data is later inputted into a simple Excel calculator, which generates a field score ranging from one to ten. The BLP team developed a simple, user-friendly field-scoring system that assesses key habitat indicators—grazing level, litter level, feeding system, condition of natural water sources, evidence of soil erosion, extent of scrub, weeds and problem species and the overall ecological integrity of the field. Each criterion is given a weighted score (based on a detailed instruction manual) and these scores are aggregated to provide an overall field score which captures the environmental health of that field, that year—in effect, the 'output.'

5. In the office, the advisor generates maps detailing all planned capital work, a list of the proposed tasks, their field location, instructions on carrying out the tasks, a funding rate (all tasks are co-funded by farmers) and a price for the task. The advisor also generates a list of fields on the farm, with management recommendations for each one and the 'field score' for that year, and the payment to be issued based on that score. This draft plan is then submitted to the BLP office to be checked. An MS Excel farm plan template is provided to accommodate all of the information generated. Payments for 'results' are calculated by multiplying the field score by the field size (ha) by a given rate—thus higher scores mean bigger payments.

6. The BLP team reviews each plan in two phases. Phase 1 entails detailed technical checks. Each proposed task is assessed to ensure it provides environmental benefit and value for money. The cost of each job and the proposed methodology are then reviewed, which often entails a visit to the site. Required permissions for work are then assessed and steps undertaken to secure them if needed. Field scores are also reviewed and where significant changes (>1 score) are noted, these fields are usually re-scored by the BLP team.

7. Phase 2 checks are administrative in nature. All fields are checked to ensure they are eligible for payment and that no double payments (from other schemes) are being made. All areas, prices and wording are reviewed. Once complete, a final sign-off check is made by the BLP manager before the plan is returned to the advisor.

8. The final plan is printed off in A3 form (usually three–four pages) and the advisor meets the farmer to go through the plan and they both sign the document before submitting a signed copy to the paying authority (DAFM).

9. The farmer carries out all listed tasks on the plan within the calendar year. If he/she cannot do the work, a list of local contractors (mostly other local farmers) is available. If the farmer elects not to do the work, he/ she can declare this task 'not done' on a one-page declaration form and payment for this task is then withheld.

10. The BLP team checks 20 per cent of farms to ensure work has been carried out and then supplies a payments file to DAFM showing the net amount due (initial budget less cost of tasks declared not done, less cost of tasks found not done on inspection) to each farmer. Payment is usually issued in February of the following calendar year, though approximately 10 per cent of payments are delayed pending the results of DAFM's own inspections.

The BLP year follows the calendar year. In the next year the planning process starts again and we return to step 1. Farmers must also partake in a mandatory annual training programme composed of a two–three-hour classroom session and a two–three-hour field trip, usually held in late autumn when things are quieter on the farm.

Key BLP Innovations

Rather than describe the operation of the BLP in further detail (annual reports and other BLP resources are available on www.burrenlife.com), it is perhaps more useful to highlight some of the key differences that distinguish this AES approach from others, and why these different approaches were adopted.

Simplified farm plan and paperwork:

Given its farmer-centred approach, BLP needed to engage farmers in a fuller understanding of the BLP and how it works on their farm without burdening them with additional paperwork. Many AES plans tend to be lengthy, jargon-and-text-filled and quite generic. BLP developed a template for a new streamlined plan,

which is concise (three–four pages), visual (all work mapped on aerial pictures) and relevant (all jobs listed with a price for each, all fields listed with their score and payment). At year end the farmer has to fill out one, simple declaration form to apply for payment, and no receipts are required for the vast majority of items (as prices are based on fixed costs). Permissions to undertake work are organised by the farm advisor (for NPWS permission) or the BLP team (for National Monuments Service (NMS) and Forestry Service permissions), resulting in very little paperwork for the farmer to complete.

Field scoring system:

To capture the habitat health of a field, a simple, transparent, user-friendly (so farmers could use it) scoring system had to be developed. Rather than use 'indicator species', this system used habitat attributes—grazing levels, litter levels, feed-site damage, condition of natural water sources, soil damage, levels of scrub, bracken and weeds. The advantage of using these, rather than species indicators, is that farmers are better able to score their own fields and thus have a better sense of what they need to do to improve the score (farmers are always encouraged to 'challenge' their scores). This field scoring system is a simple, practical way to capture the environmental health of a field in a very transparent manner, and thus to reward farmers equitably, based on their performance. In the farm plan, all field scores are listed along with their payment, with management recommendations on how to improve the score. This system allows the farmer total flexibility in land management (what stock, when, etc.) but rewards improve management. It guarantees value for money to the taxpayer (no delivery, no payment) while also providing an accurate 'monitoring' system for the programme at a field, farm and landscape level.

Hybrid payment structure:

BLP has two main measures that absorb roughly equal funding: one for actions (capital works), the other for outputs/results. Capital works are allowed up to a certain ceiling based on the area of Annex I habitat present. Within this limit, each task that a farmer chooses has a listed price, which is the gross cost of the task less the farmer's contribution. For example, for wall repair and scrub work the farmer co-funds 25 per cent of each task, for water work 50 per cent, for access tracks 75 per cent. Again this ensures value for money but also ensures no spurious work is undertaken. For the output measure, no payment is made for scores under five, stepped payments are made from five to ten, with bonus payments of 10 per cent and 20 per cent for nines and tens respectively, offering a strong incentive to farmers to improve site management. All BLP payments are 'banded' degressively (highest rate for first 40ha, then stepped back by 50 per cent for each additional 40ha), which supports the smaller farmer (additional social dividend). A simple inverted payment structure whereby lowest scoring fields are paid on first, i.e. at the higher-banded rate, thus costing the farmer more money, helps to focus farmers' attention on lowest-scoring fields that require most urgent attention.

Farmer input:

Farmers decide what work they want to take on every year, also when and where they do it. Telling farmers what to do is usually not effective. In contrast, asking them what needs to be done results in work being selected more carefully and strategically, being carried out to a higher standard and proving much more likely to have a positive, long-term impact. Under the results-based payment system, farmers also get to decide how to graze their land and feed their livestock and are judged on the environmental impact resulting from this. For those farmers who need help in making management decisions, support is always available should they need it through their trained advisor and through the local office. In addition, farmers, and their advisors, are continually encouraged to suggest ways in which the BLP could be improved.

Farmer Awards:

Annual prizes are awarded for the most improved farm, best pasture, best meadow, best standard of work and an overall prize for best 'conservation' farmer and best farm family. These 'Origin Green' Awards, sponsored by Bord Bia, represent a powerful affirmation of the work of the best conservation farmers, who can act as a role model for others within the farming community to emulate.

Jim O'Toole (centre) of Bord Bia presenting the 'Origin Green – BLP Farm Family of the Year 2015' award to Harry Jeuken, with his wife Maria Dortman & daughters Melissa and Eileen. © Willie O'Reilly.

Impact

The environmental impact of the BLP on the ground can be captured quantitatively (in terms of capital works done) and qualitatively (in terms of the changes in habitat health scores). The latter data in particular (see below), generated through the application of the field scoring system on approximately 12,000ha on land, confirms the positive impact of the BLP and is an essential justification of its continued funding.

Capital Works 2010–2015

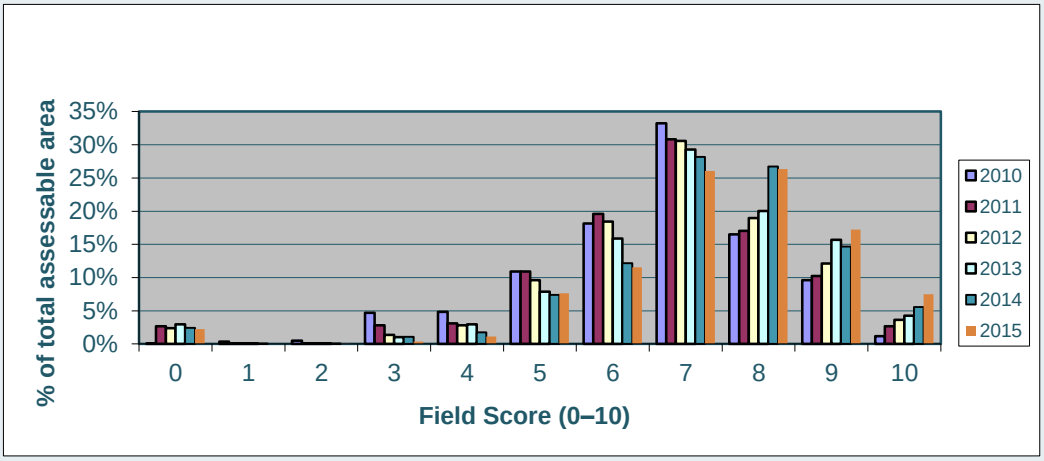
€2.3m was allocated to farmers for 5,400 individually costed jobs over these six years including:

- 242ha of invasive scrub removed to help restore Annex I priority grassland habitats;
- 164km of pathways opened through areas of scrub to improve livestock and farmer access;
- 112km of fallen stone wall repaired plus 32.7km of wire fencing erected to aid grazing and herding;
- 725 new gates installed (incl. 150 bespoke Burren gates) to improve livestock management;
- 443 new water troughs, 37 water pumps and 80 storage tanks installed to help protect water sources;
- 132 feed bins and 180 feed troughs purchased to help reduce silage feeding and improve environment;
- 22km of new track built, 34km of existing track upgraded, to improve overall winterage management.

Payments for Results 2010–2015

Every year, in excess of 1,000 individual Burren fields of approximately 12,500ha in extent are scored by trained advisors, with these scores checked by the BLP team (who investigate any major year-on-year shifts in scores). The average score (by area) across the entire programme area has moved from 6.49 (2011) to 6.72 (2012) to 6.88 (2013) to 7.1 (2014) and to 7.3 (2015). This gradual but positive shift toward higher scores (and by implication improved environmental health) can also be seen in Graph 1 (note: score ‘0’ is only applied where silage feeding takes place—a derogation from this was applied in year one (2010)).

Graph 1: Variation in Field Scores, 2010–2015



Social and Economic Impact

Almost €6m has been directly invested in the Burren through the BLP between 2010 and 2015. Given that all tasks are co-funded by farmers (in cash or through work), the actual value of the programme is estimated at around €7.5m. Additional funding has also been invested in the local office and management team. Like all rural areas, much of the funding is recycled locally. A database of 80 local workers (many of them part-time farmers) is available to help farmers who are not in a position to do the work themselves (those older, with off-farm work, etc.). Several of these contractors are very busy, particularly during the scrub-cutting season. Two local craftsmen have developed an add-on to their business by making Burren gates, while local hardware and farm-supply shops supply many of the durable goods purchased by farmers for BLP work. Several farmers have developed agri-businesses of their own including farmer-led farm tours and farm cafes.

Socially, the BLP has enabled farmers to come together to undertake meaningful work at a local level, while training days (six–eight events annually) are very well attended and provide farmers with the opportunity to exchange ideas and experiences for managing their land for themselves, the environment and the wider community. The broader social impact of the BLP requires further research but anecdotally the BLP has helped improve respect for the work of Burren farmers and thus their professional self-esteem as custodians of one of Ireland's most extraordinary landscapes.

Future Plans

Within Ireland's Rural Development Plan 2014–2020 a new Measure for Locally Led Agri-Environment Schemes (LLAES) is included, which is said to offer 'a complementary approach to the action-based approach adopted for the broader GLAS scheme.' Through this measure there will be 'support for a small number of projects identified centrally as being of critical environmental importance, namely

the continuance and expansion of the existing Burren Farming for Conservation Project, and the preservation of the freshwater pearl mussel in certain priority catchments.' It is also noted that 'the experience of the BFCP will inform the design of similar projects under the new RDP' (DAFM, 2014).

A new 'Burren Programme' commenced in January 2016. With an annual budget of €3–4m, 4–500 target farmers, and a five-year timeframe, it represents a very substantial expansion of the BLP in terms of budget, area and timeframe. The BLP structure will be largely retained, though changes such as DAFM funding of the local management team and the introduction of five-year farms plan are likely. This will be a Higher Level Scheme with many BLP farmers also participating in AEOS, GLAS and the Organic Farming Scheme. Such schemes tend to be more 'broad and shallow', BLP narrow and deep. To ensure the schemes complement each other, precautions will be taken to ensure no 'Capital works' are double-funded, while no 'Results-based' payments will be made for scores of less than '5'—with the assumption that farmers are adequately compensated for scores less than this under the basic payment scheme, AEOS, GLAS or organic farming scheme (OFS). In general, the BLP will continue to focus on incentivising and rewarding excellence in management on areas of the farm with highest heritage and environmental values and not impact on improved areas of the farm.

On a wider front, the AranLIFE project will conclude in 2017 and will hopefully follow the Burren by being incorporated into a locally led results-based programme for the region. Elsewhere, a €1.4m (70 per cent EU-funded), 3.5-year 'Results-Based Agri-Environment Project (RBAPS) is looking at how a results scheme might work in other habitats—the Shannon Callows, Leitrim and Navarra in Spain. Both AranLIFE and RBAPS have close similarities and working links with BLP. Additionally, in 2015 DAFM will launch LLAES in regions with Hen Harriers and Freshwater Pearl Mussels. Longer-term, it is hoped that if these LLAES schemes are successful then locally led, results-based programmes will become even more significant within the next Rural Development Programme (RDP) in 2020.

Section 4: Discussion

The initial stimulus for the BLP came from the introduction of REPS to the Burren, welcomed by farmers for its financial support, but not as a good 'fit' the region. Farmers felt that REPS was both an opportunity and a threat: in a 1994 letter to the Minister they state that 'without REPS there will be no farms and without farmers there will be no Burren as we know it.' To negotiate better terms, farmers came together as a local organisation 'Burren IFA', which, unlike the National IFA, was very targeted and specific in its agenda. The Burren IFA did achieve a workable compromise, highlighting the power of a focused local group and their formidable networking and lobbying ability, something that remains a key success factor in the BLP to this day. The extraordinary role in particular of a few local champions has been immeasurable and suggests that an investment in the support of such 'community champions' may yield an impactful long-term dividend.

While far from perfect, REPS certainly had an effect on how farmers looked at the land. Also, the Burren REPS agreement included a recommendation that further 'research and review' was required—a very important acknowledgement that while REPS needed to be introduced, even in the absence of full facts, there was a real need to learn 'by doing', i.e. by implementing the scheme, and adapting accordingly. Again, this implement-review-adapt strategy continues under the BLP to this day and is very relevant to other AESs.

The research work was, somewhat atypically, undertaken by a locally based researcher over an extended (three-year) period and adopted a very rounded approach looking at a broad range of issues, social, botanical and agricultural. Such a holistic, ground-up approach to research worked very well for the Burren and may be of relevance to other landscapes hoping to introduce a local AES. It captured a lot of key local management knowledge and helped align perspectives—agriculturalist, scientist, policymaker, conservationist—toward a set of shared values and benefits. The research, and subsequent book, also served to retell the story of farming and the Burren and gave back to farmers the story that they felt other 'experts' had appropriated.

The positivity and knowledge generated from this work would, however, have come to nothing, as is typically the case for 'dusty PhDs', were it not again for the tenacity and determination of some locally based advocates who continued to see this work as a key need and opportunity for their area. These champions and their network of contacts were able to convince others within their organisations to support—in various ways—an application for EU funding. With a solid research base, a strong partnership and an innovative approach, this funding was secured and greatly amplified the research capacity and impact.

The EU-funded Burren LIFE project was a tremendous opportunity that afforded the luxury of sufficient time and resources to answer some key management questions through a process of applied research on Burren farms. In a process that can be described as local, inclusive, practical, innovative and thorough, the research generated critical information on the cost and impact of various management options. It won the respect of local farmers who saw it as relevant and progressive, and cemented working relationships between partners. It also generated significant

interest in the media and garnered several awards, which greatly encouraged all those involved in the project, including the funders of its later expansion, DAFM.

The roll-out of the programme brought challenges but the strong relationships built, the solid knowledge base and the capacity to innovate in the programme design (in response to some key insights) helped ensure that this phase was, in fact, a significant improvement on the previous one. In particular, key weakness of the Burren LIFE approach—such as the unwieldy farm plan and the failure to motivate farmers to improve grazing systems—were addressed by streamlining farm-plan design and introducing a results-based measure. This again highlights the importance of research but even more so of the need to adapt to research findings.

It is clear from the account given that a broad range of actors have contributed to the success thus far of the BLP. Many of these were sufficiently motivated to go well beyond their normal brief and comfort zone, perhaps because of their strong personal sense of connection with the BLP and pride in its tangible achievements, for example, visionary local farm leaders who, rather than adopting a reactive, critical stance, had the courage, skill and vision to bring their community with them into unchartered waters. Equally important was the Burrenbeo Trust, a local NGO that saw the importance of farming and worked positively to promote and support it rather than taking an idealistic, adversarial approach, which sometimes characterises NGOs. The scientific input into the BLP has been defined by its focus on serving on-the-ground need, tailoring the methodology accordingly and using results effectively by communicating them simply and well to the farmers who were required to apply them on the ground—an all too rare case, perhaps, of the scientist serving the farmer well. The BLP also enjoyed considerable institutional support, often due to individual champions within Departments who worked 'up, down and across the line' to ensure 'top-down' support for the 'bottom up' initiative. The continuity, commitment and experience of the local BLP team is also of immense importance, ensuring key local learnings are translated into a workable and impactful programme.

Today, the BLP is often cited as a model for how local AESs should work. However, this belies the fact that it is still a work in progress—as indeed it needs to be if it is to continue to respond to changing circumstances. Even within its 160 farmers, there remain those who are still not 'on board' and whose environmental performance remains very poor, though it must be said they earn very little as a result, so it is important to remember that the BLP model will not work for farmers everywhere.

Drawing lessons for other areas from the BLP experience must come with an additional health warning given that the Burren is so very distinct and unique, as are the circumstances, timing and 'champions' involved in the development of BLP, as described earlier. Thus, some of the lessons from the BLP may not always apply elsewhere. However, it could equally be argued that if the BLP model can work in such an ecologically and agriculturally complex area as the Burren, it should be possible to adapt and apply it where conditions are likely to be far less complex. Indeed, how this might be done at an Irish and EU level has been explored in recent publications by McGurn and Moran (2013) and Keenleyside *et al.* (2014).

McGurn and Moran (2013) capably demonstrate how the BLP approach—in particular, the field scoring system—could be adapted and applied to other areas of High Nature Value (HNV)—of which there are over one million hectares in Ireland—in a report on 'A National Outcome-based Agri-environment Programme.' Proposing a BLP-like hybrid AES to target areas of semi-natural farmed vegetation (heathlands, semi-natural grasslands, breeding wader sites) at a cost of €127m, the authors claim that 'the development of a cost effective, targeted, outcome-based agri-environment programme has the flexibility to encompass all farm types; will encourage the maintenance and restoration of Ireland's semi-natural agricultural habitats and associated ecosystem services (C sequestration, water quality and storage, biodiversity, landscape, cultural heritage, etc.); meet Ireland's legal obligations to protect and improve the status of our species and habitats; and help maintain the agrarian presence that is an essential component of our rural landscape.'

Keenleyside *et al*. (2014) take an even broader perspective, looking at a range of results-based AESs in Europe, producing a very useful 'Results-based Payments for Biodiversity Guidance Handbook' to assist public and private bodies interested in designing and implementing results-based AESs. This guidebook, which contains a useful step-by-step guide to AES design, case studies (including the BLP) and lots of useful resources, was part of an EC initiative http://ec.europa.eu/environment/nature/rbaps/), which included expert articles and case-study videos, and also allocated funding for some pilot 'Results based' initiatives including one in Ireland—Spain (Shannon Callows, Leitrim and Navarra) to which the BLP team contributes. While the guidebook lists many different types of results-based payment schemes for farmland, each one is different—most, for example, use plant or animal species as indicators, but a few, including BLP, use other habitat attributes. BLP feels strongly that its indicators are best placed to meet the requirements of being 'quantifiable, reliable and ensure biodiversity outcomes, are sufficiently balanced, context-specific and sensitive to the impacts of agricultural practices, yet are transparent, understandable and measurable at reasonable cost for farmers and others' (Keenleyside *et al*., 2014), unlike other methods that can be complex and as a result disempower the key agent in delivering the appropriate management response—the farmer.

As many of the possibilities, challenges and considerations to scaling the work of the BLP have been ably explored in these publications, perhaps it is more useful for this overview to 'localise' and drill down further to the core of the BLP by recounting six key 'operating principles' arrived at while working with farmers in the Burren over the past 15 years. These fundamental realisations or understandings give a better insight into the 'why' and 'how' of the BLP—and may suggest guiding principles for other AESs.

1. Realising that farmers own the land and the livestock, have the skills and experience, are willing to do the work and have no intention of going anywhere just yet—so we can never do this without them and, if we want to do it well and at reasonable cost, we will need to do it with them. To do this we need to understand farmers better and act to address their key motivations and concerns.

Farmers are the key actors in the BLP. The short- and long-term success of the BLP depends heavily on getting these farmers on-side, convincing them that 'farming for

conservation' is a good long-term investment and to adjust their management practices accordingly. We need a better understanding of farmers to do this.

Most farmers have a good appreciation of nature and understand it in a more integrated, intuitive and practical way than others. They also have a great respect for their predecessors on the land, reflected in a strong interest in history and archaeology among many farmers, and are genuine in wanting to pass on a positive 'legacy' to their successors. They generally want 'to do the right thing' and have a vast store of 'hefted' management knowledge and experience and an appetite to engage in work that they perceive as improving their holding or their lot. These positive attributes are rarely acknowledged: O'Rourke (2005) cites Turner (1995) who states that 'it is disconcerting that it is the very people who have led a life of intimate contact with nature, such as farmers, fishermen and hunters, that are today seen as the enemies of conservation, with little say in the management of the natural resources in question.'

Farming is first and foremost a business. Farmers are no different from most of us—their main aim is to provide a good living for their family from the land. For thousands of years, up until recent times, they have done this through selling their produce—thus, many farmers remain understandably single-minded in their view of the land and its use. For most farmers, success is defined, both financially and within farming society, as 'improving' the land and producing as many high-quality livestock from it as possible. This is reinforced by agricultural training courses and by farm advice and media, which often fail to take account of the vagaries of place, and by farmers' innate desire to be 'progressive.' While in recent years AESs have offered new sources of income and perspective, most farmers haven't abandoned this 'productionist' mentality. In fact, many 'schemes' are viewed negatively through this prism of perception as they are seen to restrict production. Thus, unless an AES can make long-term financial sense and be seen as a progressive investment that will complement or enhance the existing farming system, it will ultimately struggle to succeed.

For farmers, it's not just the *amount* of money: the fairness of, and justification for, payments is also important. Most AES funding is seen as 'compensation' rather than earnings and is not respected as much because of this—most farmers subscribe to the mantra of 'an honest day's pay for an honest day's work.' Also for farmers, the 'fairness' of the payment is often in question—if one farmer gets a lot to do a little, the farmer who gets a lot for doing a lot still won't be very happy. For farmers, payments must be fair and linked to effort. Beyond the issue of payment one of the biggest turn-offs for farmers when it comes to AESs has been their highly prescriptive and restrictive nature (though newer AESs are more 'optional' in structure). Farmers cherish the freedom that their lifestyle affords them and they really resent being told what to do on their farm by others, who have little or no knowledge of the particular farm and who are often promoting an inappropriate model. This limits farmers' freedom, reduces their sense of 'ownership', devalues their expertise and dulls their initiative. Pienkowski and Bignal (1999) note that farmers find AES prescriptions 'illogical in the context of their own knowledge and understanding of their farming systems and enterprises.'

Prescriptive approaches also fail to take account of the range of issues that continually impact on farm operations—weather, climate, disease, market

conditions, for example, or issues relating to family health or cash flow. Ideally, by allowing farmers the scope to use their own discretion and 'hefted' management knowledge, within general guidelines, of course, these unforeseen circumstances can be accommodated. Jones *et al.* (2003) advocate an approach to AESs 'that provides the farmer with a description of the desired output' as the only one that truly integrates agriculture and environment, and where possible the farmer needs to be allowed the flexibility in how he achieves this.' This supports the results-based approach.

Farmers also detest the penalty-based nature of AES. Many farmers are scrupulously honest, a fact that is often forgotten. Most are very anxious to 'do the right thing' and avoid trouble, especially from the Department, and live in fear of this. Unfortunately, many AES rules are designed around the 'problem farmer' so everybody suffers, which is seen as very unfair. Most farmers welcome troublemakers being brought to book but in general feel that the system needs to be more incentive-based than penalty-based. Within the BLP, poor performers receive very little payment. Furthermore, the locally based nature of the BLP allows better targeting of 'controls', ensuring that problem farmers, who tend to drag down standards, are fully held to account. This has been critical in ensuring the 'majority in the middle' find 'improving performance' a more attractive and worthwhile choice than 'non-compliance.' It is interesting to note that most BLP farmers have proven to be very supportive of high levels of control once they are fair and give people a chance.

Another lesson learned from working with farmers is that they, like many others, hate paperwork and tend not to read plans—they much prefer doing the work. Many farmers rely heavily on their advisors to guide them through issues in which they don't feel interested or competent, potentially resulting in an untrue reflection of the vision and desire of the farmers themselves. To address and combat this, the BLP has created a streamlined farm plan template and removed most of the bureaucratic burden from farmers—making the information available to them accessible and transparent. Local support is provided through trained advisors or the BLP office—which is vital in helping farmers navigate through what can often seem alien, abstract structures. Both farmers and advisors really value this face-to-face (ideally on-farm) support, as opposed to dealing with faceless people at the end of a telephone line as is more typically the case.

Cognisant of these realisations, when designing the BLP this farmer-centred approach to delivering environmental outputs was central, resulting in what O'Rourke (2005) describes as 'adaptive co-management', which 'focuses on creating functional feedback loops between social and ecological systems, and the avoidance of set prescriptions of management superimposed on a particular place.' Extending this to other AESs, the following principles can be recommended:

- Respect, and build upon, farmers' knowledge and experience by listening and learning;

- Reward farmers, effort and ingenuity through a fair and transparent payment system;

- Allow farmers freedom to farm—farmer to decide what to do, how and when (within limits);
- Allow flexibility to enable diversity of circumstance from farm to farm, from year to year;
- Involve minimal paperwork—including a streamlined and visual farm plan;
- Avoid the typical penalty-led approach and focus on encouraging rewarding positive behaviour;
- Be practical, relevant (e.g. language) and realistic—be prepared to compromise;
- Be local—in terms of support, advice, oversight—and long-term (continuity of approach);
- Support farmers with advice and training, and with assistance to navigate legislative requirements.

2. Realising that capital works or calendar farming will not address environmental needs

Most AESs involve an approach that compensates farmers for compliance with, for example, a list of notifiable actions, and/or payment to carry out actions to improve the environment. During the Burren LIFE project, an action-based approach was also adopted but, in spite of the success of the project, it was found to be limited. Simply put, carrying out 'capital works' did not always lead to improved management of a site, as many of the (agricultural, social and economic) factors that resulted in the site's condition declining initially still pertained. Equally, some AESs sometimes list calendar dates for certain recurring actions (grazing, mowing, slurry application) but this approach is also limited as it does not accommodate issues (weather, farm circumstances, etc.) that invariably arise. It also disempowers and frustrates farmers and may also not serve the environment well—Jones *et al.* (2003) state that strict prescription leads to uniformity and a simplification of areas where habitat complexity is often central to the natural heritage interest.'

In many ways, being prescriptive stifles the innovation that can make an AES successful. DAFM and NPWS, funders of the BLP, were not prescriptive about the overall BLP structure: instead they left the design and delivery of the programme to the experienced local team who were then able to create an innovative programmatic response to meet the BLP's stated objectives. In effect, the BLP employs the same approach when dealing with farmers—rather than disempowering them through additional rules and prescriptions, the approach is to clearly communicate the BLP's objectives, provide support (guidelines, training, etc.) and then incentivise farmers to use their initiative and experience to achieve these objectives on their land. Thus it is recommended for other AESs that a key principle should be to pay for actions and results—incentivise recurring management (grazing, feeding, etc.) as well as co-funding capital works:

- Incentives to improve environmental performance based on a field scoring system (using simple indicators), to enable a diversity of management responses, from field to field and year to year;

- Payments for capital works to help improve environmental 'infrastructure' on the farm and thus the environmental output, co-funded to ensure better job selection, value for money and impact.

3. Realising that every landscape and place is different and any AES must be equally so.

The seeds of the BLP were sown when farmers realised that the one-size-fits-all approach of REPS would not work for the Burren. There was limited buy-in to a scheme that came from 'outside' with scant consideration of local circumstances, traditions and threats. Local stakeholders recognised a need for a more bespoke local approach, which required further research focusing on dealing with specific Burren issues—e.g. hazel encroachment and silage feeding on karst. The positive impact of the BLP is in large part a result of the high level of local ownership that arose from this work and its practical, targeted nature. Having a local office, steering group and training programmes are also very important in this regard.

For many farmers, farming is a multi-generational and very local business. National schemes targeting often abstract national objectives may provide cash and buy limited commitment but rarely alter mindsets and behaviour in the longer term. To borrow a horticultural example: introducing a national AES to a region is akin to transplanting a mature tree into ground to which it may well not be suited, and which will often ultimately result in a costly failure. A local approach is (potentially) more akin to sourcing local seed and carefully nourishing this until it matures—a slower but more cost-effective and impactful long-term strategy.

Farmers' loyalty to their neighbours and parish and their 'pride of place', though often 'reactively' expressed when threats emerge, can be harnessed as a powerful asset in the success of a local AES. To draw on this 'pride of place', the BLP continually reminds farmers that they are the first to benefit from the environmental improvements generated by the BLP and that they are creating a better legacy for their children while respecting that inherited from their ancestors. BLP farmers are reminded that they and their neighbours are national 'leaders' in conservation farming, a claim backed up by the press coverage received by the project. Efforts are continually made to make farmers the spokespersons for the BLP—for example, during the 2015 royal visit when BLP farmers were hosts to Prince Charles. All of this is a vital long-term investment in the BLP and offers an important lesson for other locally led schemes. Such schemes should ideally be perceived by farmers as 'improving the local area' for the benefit of the local people rather than, for example, about improving the conservation status of a plant or animal species towards which farmers may ultimately feel resentful. Thus the locally led approach to AESs should:

- Build on local (farm level) knowledge to identify problems, causes and solutions;

- Build on research findings that have been tried and tested on local farms;

- Manage as much as possible of the programme (admin, controls, training, etc.) at a local level;

- Encourage farmers to become actively involved in planning and monitoring;

- Encourage farmers to tell their stories and show their farms.

4. Realising that things are never perfect, will evolve and need to be refreshed to maintain momentum—but you must start somewhere and be prepared to learn from mistakes!

Even over the course of the past 15 years during which the BLP developed, significant changes in agricultural and environmental sectors, and in wider society, have occurred, new research (local and other) has emerged, attitudes and priorities have changed, and budgets have altered. This level of change at a landscape level is often magnified at farm level as farmers respond in their own individual way to these external forces. An AES which only allows a 'fixed' response could never accommodate such change and would only lead to frustration and poor outputs. A fixed structure also invariably leads to loopholes being identified and exploited, and also to the dissipation of enthusiasm as the novelty factor wears off. AESs must be adaptive:

- Allowing for continual revisiting of standards, actions and payments (structures, amounts);

- Remaining flexible enough to address evolving priorities and accommodate emerging needs.

5. Realising that AESs are publicly funded agri-environment schemes, not social ones, and must deliver maximum environmental improvement at minimal cost if they are to be sustained long-term.

Many AESs have been criticised as being social supports rather than environmental schemes, and as a result face mounting challenges to justify their continued funding. While funding to often marginalised farmers is welcome, there is no reason why it shouldn't also improve the rural environment, yielding a 'double dividend.' All stakeholders in the BLP have recognised the need to set, and maintain, high standards so that not only does the environment benefit, but there is a better chance of long-term funding being secured. In recognition of this, every aspect of AES design must focus on improving the environment and delivering clear data proving that it does so, and at a minimal cost. Thus AESs must:

- Deliver reliable annual impact data (e.g. through the field-based scoring system described earlier);

- Be voluntary but competitive in terms of entry, with places offered according to a farmer's potential (area of land, willingness to participate) to deliver the greatest environmental dividend;

- Reward good practice now in an effort to offset higher costs later (e.g. restoration);
- Ensure poor management is discouraged by not paying for it (e.g. in BLP if score <5, no payment);
- Require that every funded task delivers some environmental benefit;
- Provide better value for money by asking farmers to co-fund capital works;
- Provide annual training for farmers and advisors, creating 'conscious producers' and consumers.

6. Realising that everything is connected—we cannot treat farming or the environment in isolation.

Another important lesson from the BLP's development—apparent in the research work and outcomes of Dunford (2001)—is the interconnectedness of rural society, economy and environment. Joining these 'dots' is crucially important. In the BLP's case, the role of the Burrenbeo Trust in bringing the broader public support and recognition to the BLP has been immense. Their work in local schools, where they share their knowledge of the Burren's rich heritage with local children, has 'won over' many of their parents—often farmers. Organising volunteering events has allowed the public an insight into the challenges of scrub removal and wall repair, for example. Hosting monthly walks, often led by farmers, has given the public a better insight into farming, as has the Burren Winterage Weekend festival and Winterage School on Sustainable Farming.

Similarly, the BLP, which initially targeted habitats, works closely with the Heritage Council and NMS to support a local 'Field Monuments Advisor' who advises farmers on their cultural sites, uncovering 240 previously unrecorded monuments in the process. Collaboration with Bord Bia has helped put Burren farmers on the national map in marketing Irish beef overseas while also recognising their achievements through the 'Origin Green Farming for Conservation Awards.' Working with the Burren Ecotourism Network has helped some farmers develop new agri-businesses. Support for new initiatives around community representation, e.g. the Burren Charter and community wellbeing, e.g. the ChangeX Burren project are also important in supporting 'healthy communities in healthy landscapes.' To cement its position in rural society, an AES must think and work outside the box, be innovative, inclusive and try to:

- Incorporate cultural heritage into 'environmental' programmes;
- Create new social and economic opportunities for the local community;
- Look in future at role of private investment, voluntary support;
- Involve the wider community and work with other sectors.

Summary of Policy Lessons

Lessons for Agri-environment policy, in particular for locally-led AES, arising from this discussion include that AESs must:

- Be much, much better at understanding and 'engaging' farmers: for example, have a more equitable reward system, allow more freedom to farm, provide better local support, require less bureaucracy, celebrate success and don't just penalise failure, present a more progressive and inclusive image to farmers;

- Move beyond compensating farmers for halting negative practices and instead incentivise positive management by paying for the delivery of clearly elucidated and measurable environmental outputs/results;

- Recognise and accommodate different values and needs across different landscapes by taking a more localised approach to programme design and management, while also leveraging 'pride of place';

- Build on local knowledge and experience but complement this with practical, holistic, locally led research and monitoring that delivers workable solutions to key problems;

- Identify and support local champions who can encourage their peers to become more 'invested' in the AES;

- Be guided by a much stronger focus on environmental impact, rather than a social, economic, political or 'audit' focus, e.g. by prioritising landscapes/farmers where the environmental dividend is potentially greater;

- Involve good planning and effective monitoring and oversight, but also be adaptable enough to respond to impact data and to accommodate evolving priorities;

- Engage a wider range of public and private stakeholders, involve broader themes and longer timeframes.

Future AESs will need to enable a more integrated, adaptive and targeted approach to delivering a range of outputs around themes such as biodiversity, water, carbon, landscape, culture, community and food, perhaps based on optimising the inherent potential of every field within every farm to deliver along this 'spectrum' of outputs. This will be a great challenge for farmers, scientists and for the design of these AESs.

Section 5: Conclusions

The BLP adopts a simple, practical approach to a quite complex set of challenges. Its scale is a very local one in terms of the research base, programme measures and administration, but this targeted, local approach is in itself one of the key success factors of relevance to other areas and initiatives. The BLP is very focused on the delivery of clearly defined environmental outputs and every element of the programme design—from farmer selection to technical evaluations to payment systems—is based on meeting this objective, in the knowledge that it is on its environmental impact that the BLP will ultimately be judged. The BLP recognises farmers as the key group in delivering environmental improvements and caters to their key needs by being progressive and fair (payments, inspections, etc.) and minimising bureaucracy while maximising flexibility. The BLP is very adaptive and responsive to feedback from its farmers, advisors, staff and partners and now has a six-year proven track record in delivery of positive environmental improvements, within budget, justifying its further expansion.

The BLP remains, however, a work in progress facing ongoing challenges—managing the heightened expectations of funders, farmers and the public; securing continuity of funding without compromising programme structure; ensuring other policies and programmes do not undermine, or overlap with, the BLP; ensuring the BLP delivers for evolving priorities such as climate-change mitigation; and strengthening and capturing the broader social and economic benefit of the BLP. At a local level, ongoing challenges include keeping farmers on board and motivated as the BLP's novelty wears off; ensuring standards are maintained on the ground as it expands; managing the growing bureaucratic burden; and finding the right level of 'compromise' between farming and environmental needs—e.g. with use of chemicals, heavy machinery, etc. There is also the immediate challenge of expanding the BLP in an extremely short timeframe while ensuring sufficient human resources and knowledge are available locally to administrate, plan and execute it.

If it can continue to perform well, the BLP can potentially reach a level at which it can unlock significant additional opportunities for the Burren. Such opportunities include the branding and marketing of products and services; delivering greater local employment and training opportunities for local farmers; exploring new funding mechanisms, e.g. through trading 'Biodiversity credits'; and bulk-ordering materials such as gates and feed to reduce costs. The profile of the BLP is also creating ever-increasing opportunities for the Burren to act as a 'learning landscape' for visiting farmers and other AES stakeholders in Ireland and the EU.

Ultimately, the main success of the BLP has been to enhance the Burren's environment. This has been made possible by understanding, empowering and then motivating (at least some) Burren farmers to adopt a more multifaceted approach to managing their land. Though still in its infancy, this approach of viewing farmers as a conservation resource, and trusting and investing in them, has worked well, encouraging a welcome diversity of responses at field and farm level while delivering a marked overall improvement in the area over time.

The BLP works at a scale small enough to be manageable, but big enough to make a broader impact. As a model of AES, its potential is significant: there is an estimated 560,000ha of farmed N2000 sites in Ireland, most of which remain in an

'unfavourable conservation status' in spite of approximately €500m having been invested in them over the past 20 years (NPWS, *pers. comm*.). The BLP model is also potentially very relevant to other areas of HNVF of which there is an estimated 1.1m ha in Ireland alone. The BLP has hosted countless visiting groups of farmers from landscapes all over Ireland—Wicklow, Kerry, Connemara, the Mournes, the Aran Islands—and Europe who are keen to bring this model to their area. To farmers and management authorities in these landscapes the BLP story, as recounted here, offers a positive message that, no matter how difficult the situation, with time, patience, the commitment of local advocates and a targeted local approach, long-term benefits can be achieved for these farmers and their special places.

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