

Connecting Environmental Management and Farm Household Livelihoods: The Rural Environment Protection Scheme in Ireland

MONICA GORMAN*, JOE MANNION, JIM KINSELLA AND PAT BOGUE

Department of Agribusiness, Extension and Rural Development, University College Dublin, Ireland

ABSTRACT This paper presents the relationship between an environmental protection scheme, established in Ireland in 1994 under EU Regulation No. 2078/92, and the livelihoods of Irish farm households. It explores this relationship within the framework of the new policy environment for EU agriculture and rural areas as set out in Agenda 2000. At the centre of this new policy environment is the European model for agriculture, embodying the concept of multifunctionality, which recognizes the pivotal position of an evolving agricultural sector in enhancing the viability of rural areas through broadening the assets of farm families. Research undertaken with farm households in the west of Ireland indicates a positive relationship between the Rural Environmental Protection Scheme and the economic and natural assets upon which they build their livelihoods. The case of a small-scale dairy farm household is presented, showing clearly the positive impact of the scheme, while also highlighting the vulnerability of these improvements. A major challenge facing policy-makers is the extent to which acceptable levels of income and an enhanced natural environment on such farms can be sustained. The position of advisory and research institutions in strengthening human capacities on farms is highlighted and their enhanced role is suggested in order to give meaning to multifunctional and sustainable agriculture within the context of rural area viability. Copyright © 2001 John Wiley & Sons, Ltd.

Key words: farm household livelihoods; multifunctional agriculture; Ireland; Rural Environmental Protection Scheme

Introduction

This paper initially sets out the changing context in which rural area development across the EU is framed. It then explores the concept of rural sustainable livelihoods within the framework of the living countryside agenda that underpins the European Union's policy for its rural areas. A 'broadened' agriculture, whereby farm households expand the range of goods and services from which they make their living, is discussed as it forms a core part of achieving viable rural communities. The paper then details the Rural Environmental Protection Scheme in Ireland, its uptake and its contribution to farm household livelihoods. This scheme is considered a cornerstone in developing positive aspects of the agriculture–environment relation-

ship, emphasizing agricultural production methods that are compatible with the environment and the maintenance of the countryside. A case study of a small-scale dairy farm household, from the Burren area of County Clare, illustrates the role and effect of the scheme. By way of conclusion, the paper highlights a number of important lessons based on the experience of the scheme to date, and sets out some of the challenges facing policy-makers and institutions in grounding the concept of multifunctionality in pursuit of a living countryside.

The changing context of European farming

The rural context is continuously changing. Farmers in Europe constitute an ever-smaller section of the population, and the consumer's point of view carries increasing importance. Agricultural and rural policies are more and

* Correspondence to: Department of Agribusiness, Extension and Rural Development, Faculty of Agriculture, University College Dublin, Belfield, Dublin 4, Ireland. Tel: +353 1 7067096; fax: +353 1 2837328; e-mail: monica.gorman@ucd.ie

more targeted to serve society as a whole, and there is increasing demand by European society for public goods provided by agriculture—environment and animal welfare, high quality landscapes, etc.

While the production of food and fibre remains a primary function of agriculture, there is growing concern about the dangers of intensive production, such as the effects that forms of intensive mono-culture have on landscape (large fields with few trees or hedges) and pollution problems linked to high levels of agricultural production. More extensive farming systems contribute to the quality of the landscape, and to biodiversity. Hamell (2001) points out how intensification and specialization in European agriculture have increased pressure on the environment and at the same time led to a marginalization and abandonment of farming in some regions where small farms predominate.

Reform of the Common Agricultural Policy (CAP) has seen a shift away from market and price supports for European farmers and an increase in direct payments. Direct payments have greater visibility, so pressure has increased from society to ensure it gets good value from the farm sector in environmental as well as agricultural terms. The Agenda 2000 reforms reinforce this trend and propose a model for change that is distinctly different from those pursued by the EU's competitors elsewhere and recognizes that 'seeking to be competitive should not be confused with blindly following the dictates of a market which is far from perfect'. The European model is designed to safeguard farming because of its multifunctional nature and the part it plays in the economy, the environment and in society in general (European Commission, 1998).

Europe has a vast array of environmental legislation that is of importance to agriculture. The orientation of the EU environment policy is changing—the 1999 Amsterdam Treaty requires the integration of the environment into other policies, so the CAP is obliged to deal with environmental issues. Obligations from global agreements such as the Kyoto protocol are also impacting on agro-rural policy. The new CAP reform is based on a broadened role of agriculture, confirming society's demand that

agriculture should not pollute the environment, nor lead to severe erosion, nor destroy cultural landscapes that are highly valued by society. Hamell (2001) highlights the requirement that society purchases these environmental services from farmers through agri-environmental measures. In its Cork Declaration, the European Commission (1996) expressed confidence that there is acceptance of the need for public funding for the management of natural resources, biodiversity and cultural landscapes.

Kearney (2000) and Ploeg *et al.* (2000) point out that multifunctionality has emerged as one of the contested issues in the present World Trade Organization negotiations. The outcome of the clash between trade liberalization/modernization and rural development will influence the capacity for the European Commission to implement rural development policies.

A living countryside—sustainable rural communities

The notion of a living European countryside implies a unity between agriculture, society and the environment. Europe's landscape is a farmed landscape and a landscape that is valued by society as a whole. The Cork Declaration articulated the commitment of the European Commission to multifunctionality, stressing that agriculture is and must remain a major interface between people and the environment, and that farmers have a duty as stewards of many of the natural resources of the countryside. Van De poele (2000) emphasized the value that European society places on the contribution of agriculture to the viability of rural areas and a balanced territorial development. Many remote and peripheral areas offer few other possibilities of gainful employment.

To create the reality of a living countryside, people must be able to make a qualitatively good living from the countryside—that is, to construct sustainable rural livelihoods. European agricultural and rural development policies attempt to foster this 'living countryside' through a variety of mechanisms, such as measures developed from the EU agri-environment

regulation (Council Regulation (EEC) 2078/92, OJ no. L 215, 30.7.1992, pp. 85–90).

Our model of a living countryside, presented in Figure 1, places farming in a vital role, producing food and fibre but also being broadened and diversified to provide other goods and services and complemented by a range of off-farm enterprises and services that enrich the quality of life in rural areas (Kinsella *et al.*, 2000a).

The model suggests that conventional agriculture ((A) in Figure 1) needs to be revitalized in order for the production of food and fibre to be competitive and to maintain its position in the broader economy. The second area (B) is the development of other farm-based activities, the broadening of the products of agriculture to create goods and services that are valued and can yield an economic return. This pivot highlights the need to reinforce the multifunctional nature of farming, and it is within this category that the environmental goods and services produced by farming can make their contribution to the living countryside. The third area (C) is the wider rural economy that enables the businesses and services to create a vibrant rural society and economy.

The challenge to enable people to construct sustainable rural livelihoods is to realize the notion of multifunctional agriculture. Cahill & Shobayashi (2000) explain multifunctionality as the existence of multiple commodity and non-commodity outputs that are jointly produced by

agriculture, with some of these non-commodity goods exhibiting the characteristics of externalities and/or public goods for which markets do not exist or function poorly. Non-commodity environmental goods are seen as a key product of the European model for agriculture. Examples of environmental public goods would include clean air and water, landscapes and biodiversity. These are not goods that can be easily bought or sold; society values them for their contribution to the quality of life. Farmers, as the producers or guardians of these environmental goods, need to be able to integrate these broader products into their livelihoods in a way that sustainably enhances their incomes, thereby reconnecting economy and ecology in their farming practices.

Farm household livelihood strategies

Farm families employ a variety of strategies to ensure their livelihood. These strategies enable them to convert their assets or resources into goods and services that are valued by society and that can earn them a satisfactory income. Figure 2 is useful in understanding the factors that influence the livelihood strategies of farmers.

Livelihood strategies emerge in response to a continuously changing rural context. The changing context (as in the changing demands of European society) influences the base of

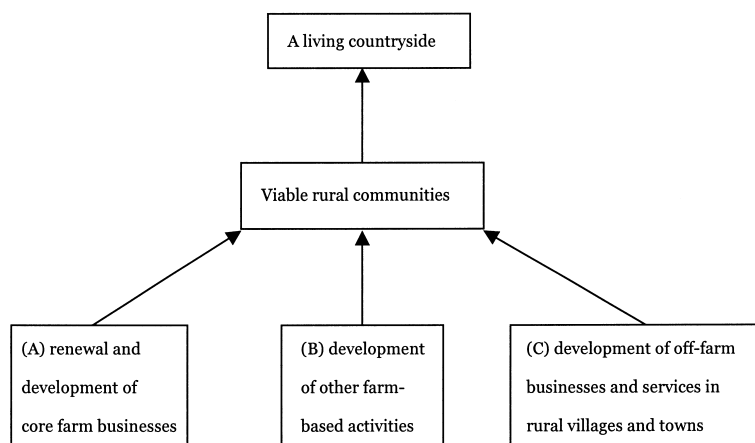


Figure 1. The key components of a living countryside. Source: Kinsella *et al.* (2000b).

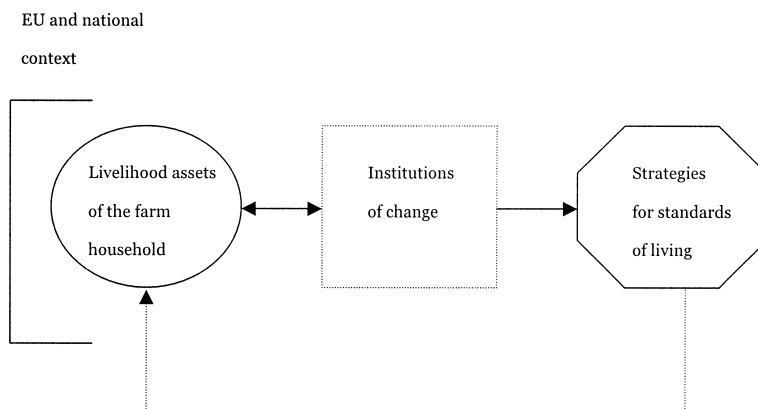


Figure 2. Livelihood strategies of farm households.

livelihood assets that people can draw on in securing acceptable living standards. This requires the farm family to be able to revise their livelihood strategy to maximize newly created opportunities that are created and to buffer themselves against constraints.

The livelihood assets of farm households are the human, economic, environmental, social, cultural and political resources available to them from which to draw their livelihood and ultimately achieve an acceptable standard of living. Human assets include skills, knowledge, self-confidence and motivation. Economic assets include land, capital and labour. Environmental assets include landscape features, habitats, clean air and water. Cultural assets might include the history, folklore, cultural heritage, gastronomic traditions and language of a particular locality. Social and political assets could include the extent to which people belong to networks that enhance their quality of life or enable them to have influence over decisions and policies that affect them. The value and importance of the different assets evolve and change with contextual changes. What once was an important asset giving access to certain livelihood strategies might lose its value due to changes in the political or economic context, or changes in the context might open up new opportunities for alternative strategies. Land that was once considered to be of low value because of its limited potential for agricultural production might now be considered an asset because of its environmental qualities.

Making the most of livelihood assets requires considerable human capacity. The European Commission (1996) recognizes the necessity for research and training to enable farmers to realize the potential of their assets in a rapidly changing context. Research also needs to focus on creating linkages between the reality of farmers who live with the natural resources and the expectations of the broader society.

Diversified agriculture as a strategy

Using the model of rural sustainable livelihoods, rural development can be seen as an attempt to increase the 'pool' of livelihood assets with which farm families construct their livelihood. This approach can be embedded in a rural development paradigm that seeks to develop agriculture along three interacting dimensions: the agri-food supply chain, the mobilization of resources or livelihood assets and the positioning of agriculture within a wider rural context (Ploeg *et al.*, 2000). This runs counter to the 'modernization paradigm', which focused on scale enlargement and intensification, seeing the rural area merely as a location for primary production and which aimed to integrate farms into agro-industrial food supply chains rather than diversifying their pool of livelihood assets. Ploeg *et al.* (2000) have 'introduced' the rural development paradigm as seeking to revitalize the interaction of the three dimensions by diversifying, deepening and re-grounding the role

of conventional agriculture. Diversification refers to the development of on-farm, non-food activities that create new sources of income and employment and are oriented at newly emerging markets; examples include nature and landscape management, agro-tourism and other new on-farm activities. By deepening, they refer to those activities that extend the involvement of the farm in the food supply chain beyond primary production of cheap raw materials by taking charge of food processing and marketing or guaranteeing specific product qualities, for example in organic farming, direct selling and high-quality food production. Re-grounding refers to a different alignment of human and natural resources towards more sustainable forms of agriculture.

Using these conceptual frameworks (the living countryside, sustainable livelihood strategies and a rural development paradigm of broadening conventional agriculture) we can analyse the impact of rural development policy mechanisms, such as the Rural Environment Protection Scheme, on the relationship between farming, the environment and society.

The role of institutions

The relationship between the context, the assets and the actual livelihood strategies that people adopt are influenced and mediated by institutions including governments, policies, regulations, support agencies and services etc. These institutions can enable or inhibit the development of certain livelihood assets and strategies. At the same time, they influence the context within which livelihood strategies are constructed. By way of an example, a change in government policy can encourage the development of different enterprises, the research and advisory priorities of development agencies can support new functions and products, markets developed by private enterprise can open new opportunities, and farmers' organizations can use their influence to negotiate the obstacles that inhibit the livelihood strategies of their members.

In a strengthening of the rural development scenario, farmers and the wider society give a

high priority to the care and conservation of the environment and to the creation of a living countryside. The people who live with and use the natural resources are central to the management of the resources. One of the downsides of the modernization paradigm is the disconnection it has created in this respect. Resentment at having to comply with society's demands for environmental goods can result when farmers see their livelihoods threatened by regulations of distant bureaucrats. The challenge for rural development is to create a win-win scenario in which research helps to articulate the perspective of farmers and gives them a meaningful place in society's debates on environmental management and in the formulation of policy. This scenario would facilitate farmers to integrate agriculture and environment at the core of their farming strategies and enable them to secure acceptable living standards.

The story of the Rural Environment Protection Scheme

Reform of the CAP in Europe has had a strong environmental dimension aimed at promoting care for nature and the environment since 1992. Council Regulation 2078/92, which came into being in June 1992, saw farmers as managers and custodians of the rural environment as well as producers of food. Each member state was mandated to implement this regulation, although participation is voluntary for farmers.

In Ireland, the regulation was implemented through the introduction of the Rural Environment Protection Scheme (REPS) in 1994. It was the first nation-wide scheme to encourage farmers to protect natural and cultural heritage. Farmers who join the scheme enter into a 5-year contract with the Department of Agriculture, Food and Rural Development to farm in accordance with an agri-environmental plan drawn up by an approved planning agency. The maximum area for which payment is made under REPS is 40 ha, while the basic rate of payment to farmers in the scheme was €160 per ha in 1999. There are 11 measures in the scheme that are directed towards controlling nitrogen use and

stocking rates, controlling waste and effluent around the farm-yard, and protecting water quality, hedges and features of archaeological or historical importance on the farm. The approved planning agencies include Teagasc (the Agriculture and Food Development Authority) and private agricultural consultants. When a farmer applies, a planner will assess eligibility for the scheme and outline areas that need to be addressed on the farm. The planner will then draw up a 5-year farm plan in consultation with the farmer. The plan, along with the application form, farm map and other supporting documentation is submitted to the Department of Agriculture, Food and Rural Development. Payment follows upon approval.

In addition to the basic premium, extra payments can be made to farmers who undertake supplementary measures within the scheme. There is a supplementary measure to aid in the preservation of certain endangered species by assisting farmers who rear animals of certain local breeds. There is a supplementary measure for organic farming, another one for farmers who undertake to give public access to their land for environment-friendly leisure and sporting activities and another one for long-term set-aside of land on the banks of certain designated rivers. Of particular importance are supplementary measures for farmers whose land is (partly) designated as Natural Heritage Areas¹ or Special Areas of Conservation.²

Many of the degraded areas within the Natural Heritage Areas include land held in common ownership—that is, commonages. The REPS requires that an Agri-Environmental Framework Plan is drawn up for these, which includes a grazing regime for the total area of the commonage, an overall grassland management plan and measures for habitat protection. Each commonage shareholder must submit a detailed REPS plan that conforms with the framework plan and other specified conditions

Uptake of REPS

By late 1999, about 43 000 farmers were participating in the scheme covering an area of approximately 1.5 million ha (31% of agricultural

land). The highest uptake of the scheme has been with drystock farmers, especially sheep farmers, while the lowest uptake has been with intensive dairy farmers, illustrating the different direction of the modernization paradigm and perhaps its negative jointedness to environmental protection.

An evaluation of REPS (McEvoy, 1999) illustrates demographic characteristics of farmers who participate in the scheme as follows:

- on average, REPS farmholders are slightly younger (50 years of age) than extensive non-REPS farmholders (53 years of age) but slightly older than intensive non-REPS farmholders (47 years of age);
- 81% of REPS farmholders were married, compared with 63% of extensive non-REPS farmholders and 69% of intensive non-REPS farmholders;
- more REPS farmers had off-farm income (33%) than either the extensive (30%) or intensive (22%) non-REPS farmholders.

Impact of REPS

In the context of the earlier discussion about enhancing the livelihood strategies of farm families through a diversification of livelihood assets, we detail the impact that REPS has had in Ireland, where the general consensus is that it constitutes a very successful agri-environmental scheme. Data from an evaluation of the scheme for the Department of Agriculture, Food and Rural Development (Fitzpatrick & Associates, in McEvoy, 1999) is used.

Economic assets

National Farm Survey data were used to examine the impact of REPS on farm gross output and gross margin. The performance on REPS and non-REPS farms in 1997 relative to 1994 was examined, and it was found that, on REPS farms, gross output increased by 5% excluding REPS payments and 22% when REPS payments were included. In that same period, gross output increased by 1 and 2% on extensive and intensive³ non-REPS farms, respectively. In 1998, family farm income on REPS farms was €431 per hectare compared with €363 and €732 for

extensive and intensive non-REPS farms, respectively. REPS also contributed to the physical assets of the farm. Machinery investment and building investment costs were also higher on REPS farms than on extensive non-REPS farms, but lower than on intensive non-REPS farms (Sinnott, 1999).

Environmental assets

Water pollution is a major threat to groundwater sources for human drinking water and a threat of eutrophication, particularly of marine and coastal environments. Reduction in the use of inorganic phosphorous and nitrogen were key adjustments required of farmers participating in REPS. This impacted on the national use of inorganic phosphorous, which fell by approximately 17000 tonnes per annum to 45000 tonnes per annum since the mid-1990s. However, Sinnott (1999) points out that recent water quality reports show that a major effort is still required in the storage and management of farm waste.

Kavanagh (1999) reported on a study that looks at the relationship between farm practices and the environment in the Burren region in County Clare, where approximately 700 farmers, accounting for 50% of the area, are REPS participants. While it is perhaps too early to measure ecological changes after only 4 years of operation, there are early indications that the scheme is playing an important role in supporting farming where it might otherwise have been abandoned. If farming were neglected in the Burren, the likely encroachment of scrub would increasingly threaten the unique landscape.

While it is difficult to distinguish the impact of REPS from the myriad of other factors influencing biodiversity on a farm, there are indications of a positive relationship. Studies are underway to evaluate the impact of REPS on the natural environment, using birds as biological indicators, and to predict the impact of specific hedgerow management prescriptions, as set out under REPS, on different species of birds. There is also a study aiming to establish a system for monitoring biodiversity by surveying plants and selected invertebrates on REPS and non-REPS farms. A protocol for a monitoring scheme is being devised.

Protecting wildlife and biodiversity does not have universal approval of farmers. In a study of common grazing areas in a Special Area of Conservation in County Kerry, one farmer expressed anxiety about an increase in the fox population (Carroll, 1998).

Cultural assets

Awareness of sites of historical or archaeological interest has been raised by participation in REPS. Kavanagh (1999) reported on the positive outcome of REPS on the identification and protection of features of historical and archaeological interest, as well as an increased number of newly discovered features identified by REPS planners in conversation with farmers. A REPS field survey in five counties yielded 65 new features and pointed to a much greater archaeological catalogue. Since REPS commenced, none of the features recorded in agri-environmental plans have been destroyed.

Human assets

Training and the development of knowledge and skills were a core component of REPS. The overall objective of the training is to foster a 'culture of conservation' among REPS participants. Twenty-one thousand farmers participated in REPS training programmes, and this made a significant contribution to increased farmer awareness of agri-environmental issues. Banks & Marsden (2000) also identified this 'culture of conservation' in relation to Tir Cymen in Wales. Sinnott (1999) points out the educational benefit that also accrued from the considerable record keeping that was required by the scheme.

REPS and sustainable livelihoods

We can examine the place of REPS in the new rural development paradigm through its contribution to the broadening of conventional agriculture. From the evaluation, it would appear that REPS has made a substantial contribution to improving the pool of livelihood assets for a living countryside. It is enabling a broadening in the sense of producing/recognizing non-food environmental goods. It has assisted farmers to

recognize and value the environmental assets in their care. Furthermore, these environmental goods represent a broadening of the pool of livelihood assets from which the farm family can generate an acceptable standard of living. They can be purely public goods or they can have a marketable nature, for example provide the basis for a tourism or recreation enterprise. If they are limited to purely public goods, there will be continued dependence on public funding if these are to contribute to the livelihoods of farm families. Such continued dependence will impact on sustainability. Efforts at broadening the range of environmental goods need to exploit the 'commercial', as well as the 'public good', nature of environmental assets if their value is to be fully developed.

REPS also enables a re-grounding of conventional agriculture away from intensive modernization towards reduced inputs, extensive production and more efficient use of resources. McEvoy (1999) concluded that, since REPS farms had achieved an increase in gross output, while at the same time reducing expenditure on fertilizers per livestock unit, substantial efficiency benefits may be attributed to REPS in terms of planning and management of nutrients.

REPS and dairy farms in County Clare

Over the 1997–1999 period some 250 small-scale⁴ dairy farm households in County Clare (in the west of Ireland) were involved in a partnership action-research programme to test their ability to achieve viable farm businesses (Kinsella *et al.*, 1999). Within the context of farm business expansion (emphasizing increased production of quality milk in an environmentally sound way) and related practice changes, the research examined the extent of uptake of the REPS and its effects at farm level.

The uptake of the REPS amongst the programme farmers was almost twice the national average (65% farms involved in REPS in 1999), due largely to the high percentage of

relatively young farmers, the size of their farms and the relatively extensive farming systems practised. The research found that REPS played an important role in building the physical infrastructure of these farms, enabling investment in pollution control structures and farm roadways while assisting in the cash flow of the farm households. Farmers in the scheme strengthened their appreciation of environmentally sound farming practices, in particular with regard to fertilizer use as well as protection of natural habitats and waterways.

The case study of a small-scale dairy farm presented in this paper is based on a farm household involved in the action-research programme. The farm is located within the Burren area of County Clare and typifies the experience of the REPS amongst farm households in the area.⁵

One farmer's experience of REPS

Liam is a 35-year-old farmer living in the Burren area of County Clare. He is married to Mona and they have three children. Mona has a full-time job in the nearby town. The farm is 50 ha in total, of which half is on the mountain. They milk 24 dairy cows and also have 15 suckler cows, 50 beef cattle and 60 ewes.

REPS on the farm

Liam joined the REPS in 1997. Even though his primary motivation was financial, he was also interested in maintaining the environment, in particular preserving the landscape and old farm buildings. At the time of joining REPS, he did not have adequate housing for his dairy cows. They were outwintered on the mountain until February and subsequently on a sacrifice paddock, a practice that was difficult for both man and beast. He wanted to construct winter housing for his cows and REPS provided him with the opportunity to fund the investment. The main effect on his management was reduction in nitrogen usage.

Livelihood assets enhancement

During his first 3 years in the scheme, Liam used the REPS payments to meet the costs of compliance to the scheme, which included: farm waste management facilities, fencing and general farm improvements. By the fourth year of the scheme, most of the REPS payment went directly into farm income, and it now augments income by €7500 per year, contributing one quarter of overall farm net margin. Through REPS, Liam has been able to invest in extra housing facilities for his livestock, thereby adding to the value of his physical infrastructure and taking some of the drudgery out of the outwintering of stock.

The scheme has acted as an incentive for him to tidy up his farm-yard and to restore old farm buildings, which he feels is very important for the area's heritage and should be encouraged further. Liam would place a high value on the natural asset that is the Burren. Apart from the intrinsic value of its flora and fauna, he also appreciates its value in attracting tourists and visitors to the area. While he is not directly involved in any tourism enterprise, he feels that the public should have access to farmland in the area, although he pointed out the problems that arise, such as damage to boundary fences, that can lead to REPS penalties for farmers. He does not believe that the REPS has led to increased tourism in the area, but it has improved the impression that people get of the area. He thinks there is more wildlife in the area now than there was 5 years ago and feels that farmers should be encouraged to return native species, including pheasants and corncrakes, as part of the REPS. He believes that these species will now have a greater chance to survive than in the past.

Liam feels that his involvement in the REPS, and the measures which he has undertaken within his REPS contract, has given him a better understanding of the range of natural and cultural assets and potentials on the farm. He also attended the mandatory REPS training programme in his area and found it particularly useful for information on regulations related to environmental management.

Liam's analysis of REPS

After almost 4 years' experience of the scheme, Liam is generally positive about its impact on his family's livelihood and about its impact on the Burren area in general. He is also aware of the shortcomings of the scheme, which need to be addressed if the positive impacts are to be sustained in the longer term.

In terms of his own farm, Liam feels REPS is making a major contribution to the viability of the farm through annual direct payments for a public good. If the scheme were to end, he would have to increase fertilizer usage and the stocking rate on the farm to compensate for the loss of income. This highlights the vulnerability of the REPS payments and the need for the broadened role of agriculture to be embedded more in the market place. Liam fears that if environmental payments such as REPS were discontinued, most farmers in the area would have to engage in intensive production practices, and the environmental gains that have been achieved would be lost.

The relationship between farm families and the Burren is long established over many generations. Overall, Liam feels that REPS has had a positive effect on the Burren in terms of better management of farm-yard waste; eliminating the practice of feeding stock on the Burren; restoring stone walls, gates and boundaries; removing plastic and twines; and, in general, making the place look better. However, he warns that the current grazing regulations are actually an environmental problem and will have a detrimental effect on the vegetation of the Burren. For, over generations, farmers carefully managed the Burren and grazed a small number of stock on it throughout the year. The low stocking rate allowed for a build-up of grass, but it also meant that trees, gorse and shrubs were not allowed to take over. Within the existing environmental regulations, farmers are only allowed to have stock on the mountain for one week between April and October. This has led to excessive growth of shrubs and trees, which is posing a threat to the unique flowers for which the Burren is famous throughout the world.

Conclusions

At the centre of the new policy environment for EU agriculture and rural areas, as set out in the AGENDA 2000 Agreement, is the European Model of Agriculture (EMA). The EMA embodies the concept of multifunctionality, which recognizes the pivotal position of an evolving agricultural sector in enhancing the viability of rural areas and farm households. This paper set out to examine whether a broadened role for agriculture, to include care of the environment, can make a sustainable contribution to farm household incomes and enhancement of the farmed environment. The evidence presented in relation to the REPS in Ireland shows that there is a positive relationship between scheme participation and the enhancement of the economic and natural assets upon which farm families build their livelihoods. However, the research also raises a number of questions about the vulnerability of the advances made and the realization of a sustainable multifunctional agriculture.

- REPS has played an important role in enhancing farm family livelihoods, particularly its contribution to natural resources, economic capital and human capacity. However, because of the almost complete dependence on public funding, the enhancement of livelihood assets remains vulnerable. There is almost a complete disconnection between the broadened functions of agriculture, farm households and the market (for example, farm-based environmental and cultural tourism).
- Realizing a broadened role for agriculture requires farm households with the capacity to convert an array of livelihood assets into strategies and livelihood outcomes. Human capacity is at the core of broadened agriculture—farm families require the skills and confidence to recognize and realize the potential of environmental and other possible livelihood assets. Research, training and other support mechanisms remain central to enhancing human capacities.
- An institutional support base, which incorporates a multifunctional agriculture knowl-

edge system, is needed to help farm families make the most of their potential livelihood assets and, where possible, to exploit the commercial value of those assets in order to ground them in a sustainable fashion.

- Development and conservation agencies also need to develop their capacity to recognize existing, 'indigenous', good practice and to engage with farmers in planning appropriate and sustainable management strategies for the natural environment that are rooted in the local reality. The role of research needs to be expanded to enable farmers' voices to be heard in policy formulation.

Connecting multifunctionality and an enhanced farmed environment to farm family livelihoods in a manner that is achievable and sustainable is a key challenge in having a living countryside. There is some evidence that achieving this objective may be possible. Findings from the Tir Cymen Conservation Scheme in Wales (Banks & Marsden, 2000) show that agri-environmental schemes—if appropriately designed and regionally embedded—may make a significant contribution to rural development and be instrumental in supporting the transition to a new type of agriculture that is commensurate with the paradigm shift to rural development.

Notes

1. National Heritage Areas (NHAs) are areas of national and international significance selected on the basis of their habitat richness, species diversity, species rarity or habitat rarity. They include the best of Ireland's remaining natural habitats.
2. Special Areas of Conservation (SACs) are sites chosen by the National Parks and Wildlife Service as those NHAs that best meet the criteria of the EU habitats directive (Council Directive 92/43/EEC, OJ no. L 206, 22.7.1992, pp. 7–50). Member states have to provide specific site management plans for SACs. REPS farmers in SACs are paid a rate of €250 per ha.
3. Extensive farms are those that produce less than 170 kg of organic nitrogen per ha per year. Intensive farms are those that produce more than 170 kg organic nitrogen per ha per year.
4. 'Small scale' refers to dairy farm businesses with less than 157000 litres of milk quota. This

category represented 90% of dairy farms in Co. Clare and almost 70% of dairy farms in Ireland.

5. The Burren is a unique place in the south west of Ireland—the largest karstic limestone formation in western Europe, occupying approximately 300 square kilometres. The name Burren is from the Irish *bhoireann*, meaning a stony place; it is a harsh rocky landscape softened by the effects of wind and water. The distinctive microclimate of the area has enabled a unique mix of flora to grow giving the area a great interest for botanists. There are relics of human habitation dating back almost 6000 years. This area has some of the finest archaeological megalithic tombs in Ireland, if not in Western Europe. Source: www.moytura.com/burren.htm

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