

Transformations in high nature value (HNV) farming and their socio-ecological implications - the case of upland commonages in the SW of Ireland

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Abstract

The loss of biodiversity is an issue of increasing importance for human welfare, but sustaining this global common good on a local level often leads to conflicts of interest. The design of sustainable agricultural and biodiversity policies in the Irish uplands, where common land has evolved to accommodate various interests, presents considerable challenges. Changes in agricultural policy and market conditions have rendered traditional low-intensity livestock production less profitable, yet the retraction of farming is perceived as having negative impacts on the economic stability, socio-cultural cohesion and ecological integrity of these areas. The multi-faceted nature of the problem requires an integrative approach to account for multiple goals and the high level of complexity emerging at the interface of ecological and economic systems while being of great contemporary relevance regarding the post-productivist future of the European countryside.

The research presented focuses on multiple use issues in the Irish uplands where the majority of land is held in commonage. In the past, co-operation by right-holders through agreeing sustainable stocking levels on common grazing land contributed to shaping and enhancing upland habitats, species and landscapes. In recent decades, however, the functioning of the Irish commonage has changed significantly with declining numbers of active commonage users and the loss of traditional institutions resulting in biodiversity loss and vegetation deterioration.

Against this background, the present paper provides an inter-disciplinary discussion of the Irish upland commons in the context of the newly emerging multifunctional agricultural regime.

Keywords: Biodiversity, Common Agricultural Policy, commonage, traditional livestock production, European uplands, multifunctionality

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1. Introduction

Europe's uplands are of high cultural, recreational and nature conservation value. As such, they have been the subject of significant research activity at the interface of ecology, ecological economics and rural sociology in recent years (e.g. Thompson and Brown, 1992; White and Wadsworth, 1994; Thompson *et al.*, 1995, Hanley *et al.*, 1996; Evans *et al.*, 2006). Traditional practices, mainly in the form of low-intensity grazing by domestic herbivores and controlled burning, are the principal management tools that have helped to shape and refine the diversity of upland habitats over the past millennia (Bignal, 1998) in what Hampicke (2006) describes as a process of co-evolution of species, ecosystems and man. As a result, agricultural biodiversity is now being recognised as just as worthy of conservation as wild biodiversity (Phillips, 1998; Plieninger *et al.*, 2006).

Rural Europe, however, is undergoing far-reaching socio-economic transformations (Marsden, 1999). Multiple new demands regarding landscape, conservation, heritage and recreation have emerged, with increasing emphasis being paid to the provision of consumption-related goods and services rather than the traditionally produced goods (Hall *et al.*, 2004). This is manifest in the latest series of reforms to the Common Agricultural Policy (CAP) that has fundamentally changed the way in which the European Union (EU) supports its farming sector and, as such, is having a profound impact on land use, biodiversity and rural communities in upland areas.

Changes in policy design, including the decoupling of support payments from production levels to give farmers greater freedom to respond to market forces, the introduction of cross-compliance measures and compulsory EU modulation to increase the level of funding for rural development all underline the changing role of agriculture in society. The term multifunctionality has come to denote a policy to re-direct agriculture towards sustainable development by liberalising the farming sector, with support and preferential tariff arrangements either removed or targeted at environmental and social goals (Moran, 2006). Farm businesses, under this new rationale, are to be more responsive to - and rewarded by - the market, with government intervention increasingly restricted to issues of public good concern.

While the wider impacts of this transition remain to be established, this change in policy direction has the potential to increase the already apparent polarisation in land use with intensification occurring on productive lands and less viable holdings being rendered increasingly marginal. The latter, in particular, has been a source of concern in European upland areas managed through extensive farming methods and characterised by high nature value (HNV) where, due to a combination of unfavourable bio-physical and socio-economic conditions, farm businesses tend to operate at the margins of financial viability.

The decline in traditional farming has been identified as one of the main threats facing European upland areas (e.g. Baudry, 1991; MacDonald *et al.*, 2000; Schmitzberger *et al.*, 2005; Strijker, 2005; Conti and

Fagarazzi, 2006; Gellrich *et al.*, 2006; Gellrich and Zimmermann, 2006; Plieninger *et al.*, 2006). Owing to concerns about negative impacts on the resilience of social-ecological systems (SES), this has become of considerable importance in recent political discussions. At the same time, it became embroiled in the debate on multifunctionality with the problems affecting upland areas having come to epitomise the dilemma surrounding the future European model of agriculture under which farm businesses have to produce within the context of an increasingly competitive international market, provide environmental goods, and reduce output while supporting prosperous rural communities (Kristensen *et al.*, 2004).

Common grazing land is among the oldest forms of land tenure in remote and marginal areas (Berkes & Folke, 1998; Kissling-Naef *et al.*, 2002; Short, 2000) where it developed to accommodate a multiplicity of interests. In the Republic of Ireland, common land covers 426,124 ha and involves about 11,837 farmers, most of them located in the uplands along the western seaboard (Bleasdale and Sheehy-Skeffington, 1995). Being a vital component of the marginal farming systems of which it forms a part, its difficult legal status has shielded common land for the most part from afforestation and agricultural improvement that has led to the large-scale disappearance of semi-natural grazing land in more productive areas. As a result, common land now represents one of the last rich reservoirs of biodiversity.

While under the last decades' productivist agricultural policies many upland commons suffered from serious overgrazing – confirming once again Hardin's (1968) acclaimed tragedy of the commons - a combination socio-economic transformations mean that undergrazing and decay of traditional management structures are now emerging as new threats to the Irish upland commons.

A large body of literature explores vulnerability of common property resources to over-exploitation (Bromley, 1991; Ostrom, 2000) and the conditions under which commons institutions are successful (Ostrom, 1990, 1998; Di Falco and van Rensburg, 2004), but surprisingly little research effort has been devoted to investigating the implications of this mode of land tenure in the present debate on the decline of traditional farming in upland areas and the role of common property resources in the new multifunctional countryside (Hynes *et al.*, 2007). Reporting on empirical findings from ongoing research, this paper is intended to contribute towards filling this gap by addressing this important question.

The remainder of this paper is organised as follows. To begin with, we will provide some background on the European model of agriculture and discuss multifunctionality as an agricultural and rural policy concept under which, paradoxically, the most intrinsically multifunctional farming systems have come under pressure. In the next section, we will describe the study area and provide a backdrop to the current debate over the management of the Irish upland commons, before the methodological approach being used is outlined. This is followed by a presentation of empirical findings showing how the Irish upland commonage has been transformed.

The paper concludes with a contemplation of this evidence against a background of possible policy change and the wider implications for the commons, discussing the need for inter-disciplinary methodological approaches based on the combination of ecological and economic methods to support the design of agricultural and biodiversity policies within the context of the newly emerging multifunctional agricultural regime.

2. Maintaining biodiversity and upland farming in the context of a changing CAP

2.1. High nature value farming in multifunctional landscapes

Nothing is as characteristic of large tracts of Europe's traditional farming landscapes as extensive livestock husbandry practiced in remote upland areas. Andersen *et al.* (2004) describe such systems as forming the most multifaceted relationship with their surrounding physical, economic and socio-economic environment since they have a long history and closely mimic the ecological conditions needed by the plants and animals of Europe's natural open habitats previously grazed by large herbivores.

'Specific and peculiar to Europe', as noted by Jones-Walters and Lane (2008: 117), the complex interactions between the biophysical environment and human activity have over time led to the development of multifunctional landscapes sustaining a wide range of economic, social and ecological services the important role of which has only recently been recognised (e.g. Stoate *et al.*, 2001). They contribute to carbon sequestration, regulation of water and nutrient cycles, structural stability of soils, flood limitation and the production of food and fibres (Gibon, 2005).

The pivotal role of multifunctional landscapes and their custodians for maintaining high nature value habitats, viable rural communities and socio-economic cohesion has been acknowledged in several European policy documents, including the Pan-European Biological and Landscape diversity Strategy (PEBLDS) approved in Bulgaria in 1995 and the European Landscape Convention (2000) (Jones-Walters and Lane, 2008). Reflecting on the European Union's target to halt the loss of biodiversity by 2010, the European Commission (2006) stated that 'humanity has benefited enormously from development, which has enriched our lives. However, much of this development has been associated with a decline in both the variety and extent of natural systems – of biodiversity. This loss of biodiversity, at the levels of ecosystems, species and genes, is of concern not just because of the important intrinsic value of nature, but also because it results in a decline in 'ecosystem services' which natural systems provide... In this context concern for biodiversity is integral to sustainable development and underpins competitiveness, growth and employment, and improved livelihoods.'

Financial measures - principally in the form of agri-environmental schemes – provide assistance for the maintenance of traditional cultural landscapes and their associated biodiversity, but their impact to date has been rather narrow (Green & Vos, 2001). According to the European Environment Agency (EEA), they have come under increasing risk of marginalisation due to the combined forces of market and policy failure resulting in generally unfavourable socio-economic conditions.

The latter are difficult issues, affecting nationally and internationally important habitats in Europe. While the degree of future societal interest in landscape change and its impact on biodiversity is difficult to anticipate (depending on ongoing social transformations, shifting demands on the countryside and the changing role of the state), various research efforts suggest that biodiversity management in traditionally farmed agricultural landscapes is moving up the political agenda to become a key characteristic of sustainable rural development (e.g. Gibon, 2005).

2.2. Changes in the European Model of Agriculture (EMA)

Recent decades have seen a strong and sustained decline in biodiversity occurring in natural and semi-natural ecosystems caused by changes in their traditional use, involving both processes of agricultural intensification and extensification (Pikala, 2000; Poschlod and WallisDe Vries (2002). As one of the oldest policies of the EU, the Common Agricultural Policy (CAP) and the various reform packages it went through since its inception in 1958 have undoubtedly had a significant impact on extensive farming systems in upland areas (Gaspar *et al.*, 2008).

Having been established originally to regulate agricultural production and markets, ensure a high standard of living for farm families and guarantee food security, the CAP went through a period of high productivity during which subsidies based on livestock headage payments maintained grazing animal numbers at higher than normal market levels. During this period, upland regions in several European countries saw a marked shift from traditional mixed livestock systems towards more simplified systems dominated by sheep, a move that was accompanied by steep increases in flock size (Sydes and Miller, 1988; Beaufoy *et al.*, 1994; Coulter *et al.*, 1998). This process frequently entailed both a loss of upland ecosystems' stability (Baldock *et al.*, 2002; Dunne and O'Connell, 2006) and a loss of competitiveness of traditional livestock systems that became increasingly 'estranged from their previous semi-natural rearing conditions' (Gaspar *et al.*, 2008: 53; see also Thompson, 1997; Napolitano *et al.*, 2005).

In the face of severe internal and external pressures that the European Model of Agriculture (EMA) has been faced with over the past two decades, the legitimacy of providing state assistance to farmers has become subject to substantial criticism and is increasingly justified by the argument that it plays a central

role in preserving high nature value upland landscapes and biodiversity while retaining the socio-cultural cohesion of remote areas and in contributing to the local rural economy, both directly through supporting agricultural production and indirectly by helping to safeguard assets on which other economic sectors such as tourism rely.

In response, more recent CAP reforms have given greater consideration to issues concerning the provision of environmental and other public goods by agriculture. The Rural Development Regulation introduced with Agenda 2000 and the strengthened second Pillar of the CAP serve to reinforce the link between agricultural policy and rural development, seeking to *'prepare farmers for qualitative reorientation of production, the application of production practices compatible with the maintenance and enhancement of the landscape, the protection of the environment, hygiene standards and animal welfare and acquisition of the skills needed to enable them to manage an economically viable farm'* (Article 9 in EC/1257/1999, EU, 1998).

As part of this development, cross compliance and agri-environment schemes have become compulsory elements in European member states' agriculture and rural development programmes (Gibon, 2005). Central to this is the introduction of a single farm payment (SFP) under the 2003 mid-term review – a direct payment to farmers that is decoupled from production levels. While this is expected to give producers greater freedom to respond to market forces rather than take land use decisions based on the goal of maximising financial support, concerns are being voiced about the negative effects of agricultural restructuring on high nature value farming in disadvantaged areas, where there will be no economic incentive to produce for farm prices below the production costs (Coordination Paysanne Europeenne, 2003).

2.3. Consequences for theoretical and applied approaches

Much research activity has been devoted to the current transformations in farming systems and landscapes in rural Europe. Burton and Wilson (2006: 95) describe the last 15 years as having seen 'the emergence of some of the most interesting and challenging theoretical debates about the nature, changes and future trajectories of modern agricultural regimes and rural areas from a variety of economic, social, political and environmental stances'.

Whilst many of these debates were confined to a conceptual level, however, there was a tendency for the empirical study of biodiversity and landscape change to stay dominated by scientific deliberations on appropriate grazing levels or biophysical processes (e.g. Grant and Armstrong, 1993; White and Wadsworth, 1994; Ihse, 1995; Thompson *et al.*, 1995; Hester, 1996; Fjellstad and Dramstad, 1999). Great

efforts were also invested into the development of tools for the assessment for environmental and landscape change (OECD, 2001a) as well as environmental impact assessment at the farm level (Haas *et al.*, 2001; van der Werf and Petit, 2002; Braband *et al.*, 2003; Halberg *et al.*, 2005), ranging from the documentation of observed change to programme evaluation and the control of farmer compliance with schemes (Gibon, 2005).

At the same time, the underlying processes related to human activity remained relatively unexplored. With the introduction of environmental and social dimensions into agricultural policy, however, this aspect gained importance. More recent work has therefore increasingly asked for an enhanced role of social analysis to consider not only underlying driving forces but also the wider societal consequences of agricultural and rural change.

This paper takes up the challenges posed by the abovementioned theoretical and practical advances and employs them to gain insight into the transformation process of a social-ecological system in the South West of Ireland in the context of current and future European legislation on the CAP and rural development.

3. Presentation of the study area

3.1. The Iveragh peninsula

Popularly known as the 'Kingdom' – County Kerry comprises an area of 4815 square kilometres and is the fifth largest county in the Republic of Ireland. Located between 51° 40' and 52° 35' north latitude, and 9° 11' and 10° 25' west longitude in the extreme south-west of the country, it is bounded to the west by the Atlantic, to the north by the Shannon Estuary and to the east by the counties Limerick and Cork.

Over forty-one percent of the county are classified as mountainous compared to only twenty-two percent nationally. This aside, it is a county of geographical contradictions, stretching from the fertile lowlands to the north of Killarney to the rugged mountains and vast bogs on the Iveragh peninsula in South Kerry. It is the latter that forms the subject of this study (figure1). Covering an area of approximately 1,700 square kilometres and surrounded on three sides by the Atlantic Ocean, Iveragh is one of the more geographically isolated regions in Europe with an average population density of less than eleven per square kilometre (CSO, 2006). The underlying geology of the area is old red sandstone, although carboniferous limestone occurs in a few locations on the eastern edge of the peninsula. Iveragh's climate is strongly influenced by its maritime location which produces high annual levels of precipitation of 1200 mm.

Figure 1: The Iveragh peninsula



Source: Department of Geography, UCC

Farming has been a decisive factor in Iveragh's development, but in recent decades tourism has begun to play an important role. The peninsula is one of Ireland's leading tourist destinations whose scenic beauty, landscape diversity and heritage are recognised through a variety of national and European designations. The greater part of the peninsula, however, has not benefited from the past decades' rapid economic growth to the same degree as other parts of Ireland. The rural hinterland remains heavily dependent on farming and has been slow to develop.

Like many peripheral areas, Iveragh has undergone significant demographic change. A gradual decline in traditional employment in farming, matched with the ample availability of off-farm work opportunities in other parts of the country during the Celtic Tiger boom period, has been the chief factor leading to a declining and ageing population in the more rural parts of the peninsula. O'Rourke and Kramm (2008) observe, however, that Ireland has recently entered a more challenging economic period with a notable decline in off-farm employment in the construction sector that looks set to continue.

Physical constraints to development and harsh environmental conditions have led to the continued existence of large tracts of traditional hill livestock farming systems and semi-natural habitats. Of particular ecological interest are the peninsula's extensive blanket bog and upland heather moorland habitats, both of which are internationally recognised as key biodiversity habitats and listed as Special Areas of Conservation (SAC) under the European Habitats Directive (92/34/EEC). On shallow soils upland and, to a lesser extent lowland or Atlantic blanket bog, dominated by bryophytes (*Sphagnum spp.*), ling (*Calluna vulgaris*) and cross-leaved heath (*Erica tetralix*), cotton grasses (*Eriophorum spp.*) and black bog rush (*Schoenus nigrans*), form mosaics with wet heath communities. Purple moorgrass (*Molinia caerulea*) may be locally abundant (Fossit, 2000). Approximately 8 % of Iveragh are covered by plantation forestry, chiefly in more marginal areas where land is of low agricultural productivity.

3.2. The farming and land management system

Farming on Iveragh is dominated by pasture based activities. This is a reflection of the area's mountainous topography, climate, and shallow soils that are waterlogged throughout much of the year, an environment which limits the potential for arable cultivation. The entire peninsula is designated as severely handicapped under the EU's Less Favoured Areas Directive (75/268), with disadvantaged area payments amounting to 17 percent of aggregate farm income (CSO, 2004).

Dairying was prominent in the past, but is now of minor importance with the number of dairy farms having declined steadily since the early 1970s, an effect of general structural change accelerated by the introduction of milk quotas in the 1980s (e.g. Gillmor and Walsh, 1993). At present, extensive sheep systems - frequently combined with small-scale management of suckler cows or beef cattle - form the basis of production.

In the past, Iveragh hill farming involved a mixed livestock system, with the non-selective feeding behaviour of cattle helping to maintain the quality of the grazing resource by browsing on vegetation too rough for sheep to eat, by clearing bracken through trampling and by keeping swards low and sweet. Hardy local livestock breeds accustomed to the rugged terrain such as Scottish Blackface (figure 3.16) and Wicklow Cheviot sheep as well as the rustic Kerry cow were the main grazing animals of the uplands.

Progressive changes to the farming sector since Ireland's accession to the EEC in 1973 have resulted in dramatic transformations of the once previously prevailing farming system. Past agricultural policy favouring sheep production over cattle under the European Mountain Lamb and Hogget Scheme (Directive 75/268) and the European Ewe Premium (Regulation 1837/80) led to a shift away from traditional mixed livestock systems towards a more simplified management system dominated by sheep, a trend that was paralleled by steep increases in hill sheep numbers (also Sydes and Miller, 1988; Beaufort *et al.*, 1994). The resulting decline in the number of bovines is held responsible for the spread of less desirable vegetation types such as Common gorse (*Ulex europaeus*), Hard rush (*Juncus inflexus*) and Bracken (*Pteridium aquilinum*) that are more effectively controlled by cattle than by sheep.

3.3. Commonage

An intrinsic characteristic of Iveragh hill farms – and Irish hill farms more generally – is the presence of commonage or extensive grazing lands that are used jointly by a number of right holders who own farms in the surrounding townlands with each farm being allocated a commonage quota (Lyll, 2000). The holding of land in common ownership has long disappeared from the lowlands (apart from some coastal areas or 'Machair'), yet it has persisted in the uplands where it continues to be an integral component of many farms to the present day.

While typically consisting of unimproved mountain land of varying quality, Hegarty (2000, provide page reference) reminds us that 'commonage is not a tangible land use (...) nor is it a discrete landscape; instead it encompasses a range of habitat types', a definition which 'supports a myriad of intricacies in terms of unclear boundaries, absent shareholders and an out of time multi-ownership system, atypical in a country with one of the highest levels of owner-occupancy in the EU', all contributing to its complexity (Lafferty *et al.*, 1999).

Kelly (1997) describes the origins of the Irish commonage as dating back before the Anglo-Norman era when most land was held by kinship groups or 'fine'. In the past, commonage use was negotiated between right-holders, a process that facilitated co-operation through informal local institutions to ensure the equitable and sustainable use of common resources. The earliest evidence of such co-operation is thought to be the 'rundale' system under which mountain land was grazed in common by kinship groups who lived together in a in a clachán with the head of the group dividing land into units of differing quality and assigning them to individual families for cultivation or grazing which would be periodically redistributed, both for the purpose of crop rotation, and in accordance to needs (McCourt, 1950; O'Loughlin, 1987; Whelan, 1997), the aim being to ensure the sustenance of smallholder kingroups (Di Falco and van Rensburg, 2004).

During this time and up until the mid-18th century, commonages were used for cultivation, livestock production and hunting, giving rise to what Aitchison and Gadsden (1992), writing about the English and Welsh Commons, term an inherently complex system of property rights consisting of a combination of private property, multiple right holders and public interest placing them in the position of being arguably the most pronounced example of multifunctional land use (Short, 1998). Having thus existed for many centuries, most commonages were formalised during the period of land reform between the late 19th Century and the 1980s when the Land Commission was set up to oversee the transfer of freehold land purchased by the Irish government from English landlords to tenants on fair terms, among the aims being the enlargement of uneconomic holdings and the reduction of farm fragmentation (Lafferty *et al.*, 1999).

3.4. Commonage Framework Plans (CFP)

Over the past decades, the functioning of the Irish commonage has changed significantly. Traditionally, as described by O'Rourke (2008), a farmer's share in an upland commonage was defined with reference to how much low land he owned privately and calculated in terms of a 'collop', a term referring to the grazing equivalent of one cow.⁵ The land's carrying capacity was determined by the nutritional value of the land

with supplementary feeding being¹ of minor importance. The 'collop' can therefore be seen as a system of 'checks and balances' (Kissling-Naef *et al.*, 2002) ensuring that no farmer kept more livestock than his private land could support during the critical months of slow vegetation growth on the mountain.

Disagreement among commonage farmers was and continues to be the order of the day, yet collective action in the form of stock management, protection of the commonage from non-rightholders, enforcement of grazing rules and vegetation management by small scale, controlled burning of heather was common and played a critical role in ensuring the sustained supply of important collective and public goods from by the commonage (Di Falco & van Rensburg, 2004). As such, it can be seen as the 'expression of the strong dependency of a society whose fate is bound up with mountain agriculture, for better or for worse' (Kissling-Naef, 2002).

This relationship weakened with demographic transition and social change occurring in the wake of Ireland's rapid economic development as well as accession to the EU and the subsequent introduction of livestock headage payments in 1975 and the inclusion of sheep meat in the Common market regime in 1980. After this, the total number of sheep in Ireland almost tripled. The dual process of farm modernisation and intensification inspired by CAP subsidies artificially inflated the land's carrying capacity through the import of feedstuff and nutrients, and drove many farmers to rent improved agricultural land. This, in combination with the onset of the 'Celtic Tiger' phenomenon, characterised by high levels of foreign investment and a concurrent boom in the construction industry that brought relative affluence even into marginal areas, started a process of rapid social change and marked the end of existential dependence on traditional commonage institutions that hence ceased to function. The result was in many instances one of poor management and land degradation, in the past through severe overgrazing (Bleasdale, 1995; Bleasdale and Sheehy-Skeffington, 1995).

Increased stock numbers and corresponding changes to the traditional farm management system had severe impacts on the ecology of the uplands where it resulted in widespread damage to heather and bare peat from overgrazing as well as species change and nutrient enrichment from supplementary feeding (Bleasdale, 1995; Bleasdale and Sheehy-Skeffington, 1995). Largely in response to the passing of a series of European directives, including the Birds² and Habitats Directive³ and the Agri-Environmental Regulation⁴, serious efforts were made from the mid-1990s to reduce the problem using two instruments.

¹ It is still common among older farmers to describe the size of their land as 'having the grass of (...) cows' rather than the more contemporary acreage.

² Directive on the Conservation of Wild Birds (74/409/EEC)

³ (92/34/EEC)

⁴ Regulation 2078/92

The Rural Environment Protection Scheme (REPS) was launched in 1994 to encourage farmers to adopt more environmentally-friendly practices in exchange for financial compensation. Since the REPS is a voluntary measure, however, and its initial uptake by farmers was slow, the Irish government introduced Commonage Framework Plans (CFP) in 1998 to address the special problems that were found to be facing commonage areas by quantifying the extent of overgrazing and prescribing de-stocking where necessary in an attempt to 'manage sites, not just designate them' (Bleasdale, 2000). To prevent further damage to upland habitats, a compulsory sheep cull of thirty percent was enforced on all commonages as an interim measure until detailed plans with de-stocking calculations based on vegetation state, stocking rate and commonage share at individual farm level were drawn up, the aim being to match more closely the sustainable carrying capacity of upland areas.

While Bleasdale (2000) anticipated that, as a result of the CFP, 'the notion of 'collective responsibility' would once again return to upland stock management', the reality is rather less encouraging. Although some commonages have improved, evidence shows that others have deteriorated or gone from one extreme to the other, i.e. from being overgrazed to being undergrazed, thus validating Ostrom's (2007) suggestion that a high level of government intervention does not necessarily lead to sustainable resource management and that users who have relative autonomy to design their own rules for governing common property resources repeatedly achieve better outcomes than experts as traditional management often involve practices that are much more complex than what is commonly acknowledged (Dunford & Feehan, 2001).

4. Farming in the Iveragh Uplands Today

4.1. Methods

In an effort to describe the current farming systems in the study area as well as to explore hill farm responses to changing conditions and the wider impact of these responses, a detailed survey of seventy-two farm households drawn from the three Rural Districts (RD) of the Iveragh peninsula was conducted between September 2007 and February 2008.

Personal interviews were conducted with the farm operator in a field setting, lasting ninety minutes on average and following a standard format that involved a combination of open and closed questions. The questionnaire was developed following a scoping study conducted between March and May 2007 that involved forty-five semi-structured interviews and two stakeholder meetings. Subsequently, the survey was piloted for one month during August 2007 before the final format was adopted.

Each survey supplies a detailed description of upland farms in terms of household composition and labour, the farming system with special emphasis on livestock and grazing management, rules governing commonage use, costs and revenues, attitudes to environmental conservation as well as restructuring in the recent past and near future. In addition, habitat surveys were conducted on each survey respondent's upland grazing area focusing on habitat type and grazing state.

To achieve a good geographical coverage, the sample was drawn from a number of distinct upland areas within each of which a snowballing technique was applied. The resulting sample contained sufficient variation in terms of farm type, size and household structure to be broadly representative of the Iveragh peninsula. Interview data was analysed using SPSS 15.00 software.

While the survey was not focused exclusively on common land, the fact that 70% of respondents had or still have a share in a commonage renders it a sufficiently common phenomenon as to have an important bearing on how the uplands in the study region are being managed.

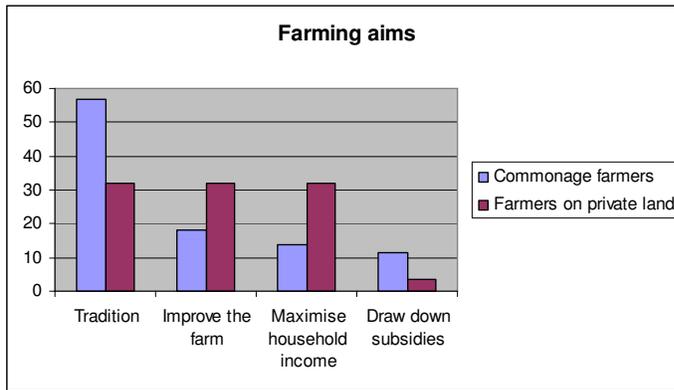
4.2. Farming and upland management today

Mean age of farm operators in the study area was 48.1 (\pm 12.7) with an average household size of 2.9 (\pm 1.6) individuals. Only 19.4 % of households were fully dependent on their farms for a living, while in the remaining cases the farm operator, his spouse, or both had an additional income. 6.9 % of respondents were retired (fig.2). Despite the high incidence of off-farm work, 81.9 % of respondents still saw themselves primarily as farmers and would prefer to farm full-time if economic circumstances allowed this.

The survey highlighted the long longstanding tradition of family farming in the area, with respondents reporting that their families had been farming the land for an average of 4.3 (\pm 1.5) generations. Commonage farmers, in particular, stated their main personal aims as being the will to maintain the family tradition of farming, whereas more farmers on private land described their aims as wanting to improve the farm or to maximise their income from it. Only a minority of respondents asserted to hold on to their land due to its asset value and the subsidies connected to it (fig. 2).

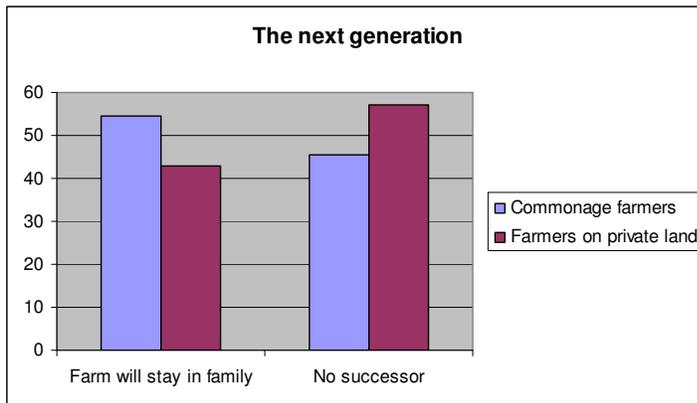
Almost all respondents had learned their farming skills from their parents, own experience or other farmers with only a very small minority feeling that education had had a major bearing on how they farmed. The latter is an issue of importance, both regarding policy-maker's scope for influencing land use and the loss of traditional management knowledge as only 50% of farmers were confident that the farm would remain in the family in the next generation. Commonage farmers were more optimistic about the future of their farm as 55% of them had successors compared to 43% of farmers on private land (fig. 3)

Figure 2



Source: BioUp Survey

Figure 3



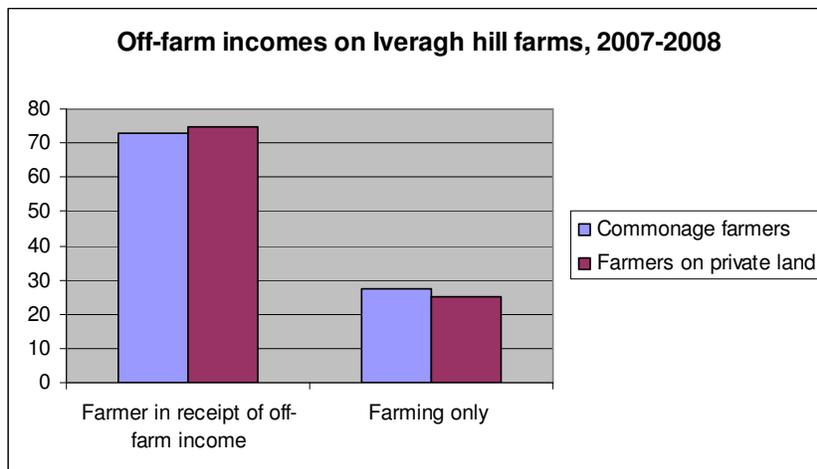
Source: BioUp survey, 2007-2008

Only 25% of the private and 27% of the commonage farmers interviewed were solely dependent on their farms for a living. In the remaining cases the farm manager, the spouse or both had an additional income, a reminder of the marginal nature of farming on Iveragh (fig. 4). Despite the high incidence of off-farm work, however, respondents from both groups still saw themselves primarily as farmers and would prefer to farm full-time if economic circumstances allowed this.

Regardless of the importance of off-farm work on Iveragh hill farms, the relative proportion of household income derived from the farm is still significant with an average of 62 (\pm 22)% of commonage and 60 (\pm 27)% of private farm households' income being contributed by their farming activities. At the same time, only 32% of farmers on private land and as little as 23% of commonage farmers believed that the farm alone could provide an acceptable standard of living for themselves and their families, a clear indicator of the economic marginality of Iveragh farms. Very few farmers, however, could picture themselves as giving up their farms and leaving the land in the foreseeable future. This strong connection between traditional

farmers and their land was also confirmed in a Burren study (Dunford, 2001) that found 84% of farmers being likely to continue despite challenging times.

Figure 4



Source: BioUp survey, 2007-2008

4.3. The farm

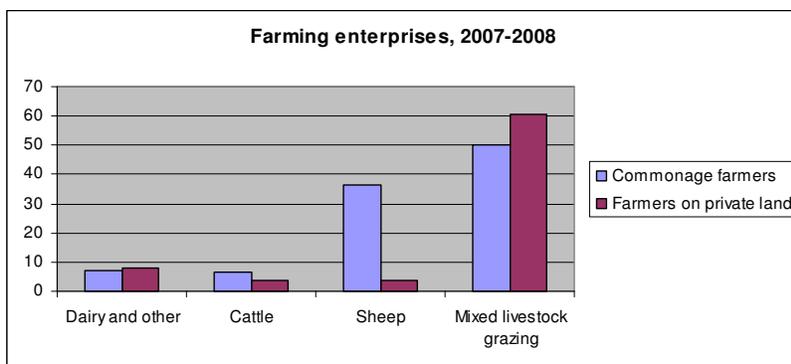
Mean farm size was found to be 114 (± 80) ha for commonage farmers and 176 (± 229) ha farmers on private land. An average of 91.3 % was owned by the farm operator with the remainder being rented in. Mean upland size was 58.5% of the total area farmed. For those who had a commonage share, common land made up a significant 52% of their holdings, pointing to its important role in the farming system.

The average number of shareholders involved in a commonage was stated to be 3.48 (± 3), yet on average only 2 (± 1.2) individuals actively used their share. While on 33.3% of commonages the number of active right holders had decreased in the last five years, 95.6% of commonage farmers stated a sharp decline in sheep numbers over the same period. 56.5% of commonage farmers stated that they had been affected by de-stocking measures under the commonage framework plans (CFP), mean de-stocking being 19.19% (± 9.7). The remainder had already joined the agri-environment scheme REPS what rendered further de-stocking unnecessary.

The most common farming system (fig. 5) in the area continues to be mixed grazing, consisting of extensive sheep husbandry with small-scale management of suckler cow herds, exercised on 61% of private farms and 50% of commonage farms. This notwithstanding, it must be noted that around one third of respondents from both groups indicated a change in their enterprise mix in recent years which in the

vast majority of cases involved giving up cattle enterprises⁵ or switching from store cattle to spring calving suckler cows, a finding confirmed by Dunford & Feehan (2001) for the Burren region. In contrast, thus, to the traditional custom of out wintering older store cattle on the hills, most calves are now being disposed off as eight month old weanlings. Many farmers feel that the current strong vegetation growth on the hills is highly correlated to the disappearance of older bullocks that effectively controlled tough vegetation when spending the winter on the mountain. As the continental breeds of suckler cow that have replaced the hardier Kerry and Shorthorn cows have higher nutritional demands than store cattle, only 19 % of farmers kept a low number of cows on their mountain grazing area for a duration of 4 – 6 weeks after weaning in late summer.

Figure 5



Source: BioUp Survey, 2007-2008

While only 4% of private farms were specialist sheep producers, this was true for 36% of commonage farmers. Mean sheep flock size recorded was 212 (\pm 147) animals on commonage farms and 225 (\pm 235) on private holdings, resulting in an overall sheep stocking rate of 0.38 (\pm 0.21) and 0.29 (\pm 0.23) livestock units per hectare (LU/ha), respectively. This, as noted by the vast majority of respondents from both groups, was a significant lower stocking rate than then one exercised under the previous productivist agricultural regime. 61% of commonage farmers' hill flocks consisted of traditional Scotch Blackface Mountain sheep as opposed to only 55% on private holdings while the remainder of ewes in both groups were being crossbred with lowland breeds as lightweight mountain lamb does not conform to current market preferences.

The above changes to the production system are beginning to have impacts on the hill environment as they have led to a reduction of grazing pressure on the mountains, both due to shorter grazing periods

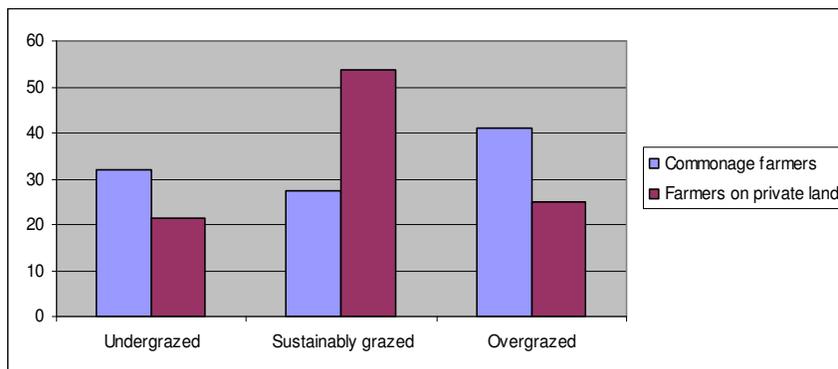
⁵ The recently introduced Suckler Cow Welfare Scheme (2008), eighty Euro per animal) is expected to revive suckler cow production in marginal areas.

and a higher proportion of ewes being housed and supplementary fed. Livestock were found to graze Iveragh's upland commonages for a mean of 190 (\pm 88) days per year, a significant reduction not only from the traditional practice of year round grazing, but also when compared to the 278 (\pm 55) grazing days that were reported on private hill farms. In addition, both private and commonage farmers stated that they supplementary fed their livestock for at least part of the year. No farmer in the sample relied solely on the natural feeding capacity of their land. It was frequently noted by respondents that the benefits derived from the production of heavier crossbred lambs tended to be outweighed by the costs of supplementary feeding once a certain threshold was crossed, with many farmers feeling they had fallen into what could be called an intensification trap.

Mean annual stocking rates on upland areas were calculated to be 0.29 (\pm 0.21) LU/ha on commonage as opposed to 0.28 (\pm 0.21) on private land, hence were below the critical threshold of 0.3 LU/ha generally recognized as defining low-input farming systems. This figure, however, masks the fact that, at 0.55 (\pm 0.44) LU/ha, stocking rates during the shorter grazing season were significantly higher on commonage than on private land (0.36 (\pm 0.25)).

This diverging trend between grazing management on commonages and private holdings was also reflected in the results from habitat surveys that showed more commonages to be either over-or undergrazed while the majority of private holdings that had more even grazing pressure throughout the year were mostly sustainably grazed (fig. 7).

Figure 7



Source: BioUp survey

It would therefore appear that, on its own, the mean annual stocking rate is a rather crude measure for capturing the intricate relationship between herbivores and vegetation. This view is confirmed by Wathern (1992) who argues that it runs the risk to misrepresent actual grazing pressure, given that the current trend towards larger and younger ewes has strong impacts on dietary preference, foraging behaviour and

trampling patterns. Similarly, mean stocking rates provide no information as regards the spatial and temporal pattern of grazing of grazing over large areas and between different altitudes (see also Fuller, 1996).

The above are aspects of great importance on commonage areas where reduced stock numbers and changed livestock breeds are beginning to have an impact on the traditional hefting system by which flocks maintain a certain home range on the mountain where they were born and raised, provided regular shepherding prevented them from straying. With low stock numbers and gradual disappearance of traditional hefts, stock spread out more what renders vegetation control exercised by grazing less effective, makes sheep harder to control and results in localised over-and undergrazing.

The majority of respondents felt that vegetation change was due changes in livestock husbandry and vegetation management practices. The latter relates in particular to the traditional burning of small patches to control scrubby vegetation which used to be a co-operative effort, but is now only carried out by 44% of farmers. There is thus strong evidence of a decline in traditional customs with 35.6% of commonage farmers stating that they no longer co-operate with other commoners in upland management.

The decay of traditional commonage institutions is also reflected in the fact that 40% of commonage farmers were in favour of converting commonages into private property by dividing and enclosing them to circumvent these problems. Legal intricacies and the topography of the uplands, however, as pointed out by O'Rourke (2008) render the equitable division of commonages a complex undertaking, often with questionable outcomes, particularly in those cases where farmers informally divide land to evade the surveying costs.

4.4. Structural change in agriculture

Looking at the recent past, the picture presenting itself in the study area is one of slow rather agricultural restructuring in term of entries into the sectors and withdrawals from it, combined with significant extensification and changes in how labour is being allocated. Overall, 80% of all farmers in the sample stated that the decoupling of subsidies from production under the single farm payment system (SFP) introduced in 2005 had had an impact on how they ran their farms, with more than half of these saying that the impact had been major. The most common ways in which farmers have adapted was by reducing stock numbers (76.4%), investing in farm machinery (48.6%) and improving facilities (58.3%). The stated purpose of these activities was to fulfil environmental standards under REPS and cross-compliance⁶

⁶ In return for receiving the single farm payment (SFP), European farmers have to keep their land in good agricultural and environmental condition (GAEC). This is called cross-compliance.

measures. Equally important, however, was the reduction in labour time afforded by the above changes with many respondents claiming that they wanted to make their farm easier to run.

Increase in farm size to spread fixed costs and render operations more viable, in contrast to findings from other studies (e.g. Lobley & Potter, 2004), has not occurred to a large extent. 55% of commonage farmers and 50% of private farmers stated that they would like to expand their operation, yet could not afford to do so at current land prices. Diversification and multifunctionality are, at present, little more than abstract policy concepts that are rather slow to be taken up on the ground. This applies in particular to commonage farmers. Although 25% of the latter were involved in a farm-based enterprise as opposed to 48% of private farm households, most of these activities remained linked to the traditional sectors of agricultural contracting and construction. Only 14% of commonage farmers and 21% of private farm households, against this, had diversified into tourism-related businesses with the family income contributed by these activities lying well below 25% of household income in the majority of cases from both groups.

Interestingly in the light of widespread hypotheses about the likely future extent of land abandonment in the literature cited in the beginning of this paper, the present survey found little evidence of abandonment either taking place or being likely to happen in the near future. When being asked as to how they would adapt to a hypothetical withdrawal of subsidies that might be effected by the next round of CAP reforms in 2013, farmers gave a variety of responses. While 29% said they would change nothing, 31% believed that they would further reduce the size of their operation and 7% thought they would increase off-farm labour time to compensate for the income loss. In marked contrast to policy debates on multifunctionality, only a minority of 7% saw diversification or the adding of an additional enterprise as an option. 26% stated that they would either rent their farms out or sell and exit the sector.

At present, however, the vast majority of both private and commonage farmers were confident that they would stay farming. Although only around one in four respondents from both groups felt that farming alone could provide an acceptable standard of living, 90% were confident that they would stay farming. Old age was the only reason cited as compelling farmers to give up in the five years to come. Considering that a relatively high proportion of family income remains to be derived from the farm and the entitlements that go with it, it appears thus unlikely that farming the Irish uplands will cease altogether, although the finding that a mean of 67% of farm family incomes is comprised of direct payments indicates a high vulnerability to changes in the support system.

5. Discussion and conclusions

The fact that a very high proportion of respondents expected to continue farming in one way or another despite downward trends in farm incomes highlights that economic forces are not the only factors

impacting on farmers' land use decisions. History, family tradition, lifestyle, sense of achievement and culture are all essential in keeping upland farmers farming (see also Burton *et al.*, 2005). This applies particularly to commonage farmers, who attach greater importance to continuing the family tradition of farming and, perhaps as a result, have a greater chance of continuity.

This argument, however, needs to be differentiated. While there seems to be a high probability that farmers will continue to farm their more fertile and accessible land, the situation presents itself as somewhat different with respect to large upland areas where simplifications to the existing farming system and reduced labour input have already led to vegetation deterioration as farmers concentrate their livestock on low ground for much of the year, yet stock upland areas very heavily during a relatively short grazing period.

This problem is likely to become more pronounced in years to come. A very careful distinction, absent in the majority of the published literature, thus needs to be made between outright land abandonment and the cessation of effective land management. Counter-intuitively, as argued by McKenna *et al.* (2005), commonage management is optimal when all those who have grazing rights exercise those rights with degradation being most likely to occur where traditional controls and customs become moribund through non-exercise of rights. At present, many right holders have little interest in managing their commonage share which has negative socio-economic and ecological impacts and highlights the need for identifying new management structures that respond to the specific challenges posed by these abundant areas in which the economics of livestock production have become questionable (Buckley & van Rensburg, 2006).

While the answer to many of the above concerns was thought to lie in the new agricultural policy framework with its agri-environmental schemes and commonage framework plans, evidence shows a stark mismatch between the concept of agricultural multifunctionality and the approaches used to implement it. Farming, while being a complex and highly adaptive sector, is too often viewed as static with agricultural policy remaining firmly anchored in what Holling and Meffe (1996) call a 'command and control' ethic, guided by the mistaken but common belief that the public sector can completely manage the landscape through regulation (Bockstael, 1996).

Part of the reason for this is the lack of disciplinary integration in empirical research on upland management. While many of the conditions that have an important bearing on the optimality of grazing strategies are in the realm of social and economic theory, the debate continues to be firmly anchored in the natural science literature with the economics that is done being poorly developed. Tenure type, in particular, barely rates a mention in major studies on land use change in the uplands although it is a powerful determinant of the types of conservation that can occur at any specific location on the landscape (Kindscher & Scott, 1997). Yet even within the tenure factor, random personal variables such as owner

age, temperament, education, value system and financial circumstances are very important (McKenna *et al.*, 2005).

To the extent, thus, that there is variation in social, economic and ecological systems, a much more flexible approach to conservation is required. To date, emphasis has been largely on biophysical system components with little, uncoordinated action on improving livelihood outcomes for livestock owners or the strengthening of local institutions. Yet this has become imperative in view of the newly emerging multifunctional agricultural regime that is based on a novel relationship between modern agriculture and rural society within which the new farming context needs no longer be linked to one specific, production-oriented goal but a variety of goals linked to production and consumption (Kristensen *et al.*, 2004).

This would certainly be a drastic change of direction away from current agri-environmental policy with its emphasis on physical management and prescribed activities, yet would be a move closer towards the integrated rural development of the Agenda 2000 debate, allowing all the environmental and economic aspects of the uplands to be incorporated into an inclusive governance and management framework (Lowe & Ward, 1998; Potter & Lobley, 1998) within which scientists and policy-makers will have to enter in dialogue with an increasingly diverse set of stakeholders that en-gage, dis-engage or re-engage with agriculture, among the questions to be asked being: to what extent and in what form should the state intervene to influence structural change for social welfare and environmental reasons (Lobley & Potter, 2004).

This gives rise to two outstanding research priorities. The first is related to the importance of interdisciplinary research on biodiversity in traditional upland farming systems. In order to assess the social impacts of agricultural practices that lead to local extinctions, habitat fragmentation or changes in the relative abundance of species, it is indispensable to gain a deeper understanding of the role of biodiversity in the agricultural landscape, the degree to which its loss affects ecosystem services, and the impact of the latter on the provision of goods and services valued by society.

The second research priority pertains to being aware of the rules governing the system under consideration, such as property rights, the changing role of the state, social transformations, and changing demands on the countryside. Being aware of these rules as well as the contextual factors that lead to their continual evolution and adaptation is vital if we are to formulate policies that enable systems to self-organise in a socially acceptable way.

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