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The Farmer and Landscape Management: Different Roles, Different Policy Approaches

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Abstract

The relationship between farming and landscape is a topical and disputed issue – in academia, among policy analysts and between policy makers and involved citizens. At a general level, agriculture affects most rural landscapes, and when agriculture changes, landscapes change, often with great implications for biodiversity, cultural heritage, recreation and other functions. The farmer is the key agent concerning landscape management decisions and practices, and the landscape is managed through three roles. As *producers* of food, fibre and energy, farmers affect landscape processes and structures through the production practices applied. In this respect, farmers usually consider themselves and their colleagues as skilful and professional producers. As *owners* of farm properties, farmers take more long-term decisions concerning overall land uses and buildings, and owners are legally responsible for landscape changes more often than producers. When land is leased, producers and owners are two different agents, and when large cooperations are running the farm, the 'owner' dimension may be of limited significance. Finally, farmers are also members of local communities in which they may participate in collective landscape projects. In addition, farmers may also in their individual choices and practices include concerns for neighbours. Farmers may therefore also manage the local landscape in the role as *citizens*. A growing number of public policy measures are affecting farmers' landscape management with all three roles being of relevance. In these policies, however, farmers are often seen solely in their role as producers implying that they may be targeted inappropriately, because their management practices and the motives behind are interpreted too narrowly, and opportunities for more effective policies may therefore be missed.

Introduction

The relationship between farming and landscape is a topical and disputed issue – in academia, among policy analysts and between policy makers and involved citizens. In cultural geography and rural sociology, the relationship represents a number of research themes including man–environment relationships (Wrbka et al. 2004; Turner et al. 2007), productivism/post-productivism and multifunctionality (Ilbary and Bowler 1998; Wilson 2001; Wilson 2008) and cultural values and environmental psychology (Oreszczyn 2000; Burton 2004; Daugstad et al. 2006; Gobster et al. 2007; Buchecker et al. 2009; Sutherland and Burton, 2011). For ecologists, the relationship is of relevance with regards to the disturbance of natural habitats and biodiversity but also in terms of the maintenance of semi-natural, extensively managed habitats (Bengtsson et al. 2003; Weibull 2003). For agri-environmental economists, the relationship is interesting in respect to various perspectives including externalities and market imperfections (costs and benefits), polluter pays versus provider gets principles and willingness to pay (Hodge 1991, 2000, 2004; Bromley 1997). Planners, policy makers and policy analysts are interested in the management of agrarian landscapes from an interventionist perspective to protect, maintain or enhance conditions for farming, or the character

and condition of the landscape in question (European Environment Agency 2004; Gobster et al. 2007; Primdahl 2010).

Farmers' management of rural landscapes is the focus of this article. As discussed below, the terms 'farmer' and 'farming' are, in a landscape management context not only about production of food, fibre and energy. We consider the farmers' management practices with the aim of achieving a deeper understanding of some of the conditions and motives framing the way rural landscapes are maintained and changed.

Furthermore, we are concerned with the manner in which public policies of different kinds affect (or might affect) agricultural landscapes – that is, how these are designed and implemented in various contexts. Our geographical scope is Northwest Europe with some focus on Scandinavia, which we are mostly familiar with. However, we are confident that our approach and reflections are meaningful to rural landscape management within all Organisation for Economic Co-operation and Development countries; although some of the key conditions affecting agriculture, including land ownership, tenure and regulatory systems, vary substantially among the countries and do make some of our points less relevant in some cases. Referring mainly on the Dutch–German–Scandinavian conception of landscape, we conceive 'landscape' as a land area characterised by various – often agrarian – functions and common rules for utilising and conserving the resources available (Olwig 1996). Specifically, we find the widely accepted definition being used in the European Landscape Convention adequate in this context: 'Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.' (Council of Europe 2000, Article 1a.)

Farmers' landscape management is, of course, determined by the motives and practices of the farmers who are operating in the landscape in question, individually and collectively. It is these practices that policy makers are concerned with and aim to influence in the first place, as all policies affect human decisions and practices rather than landscapes directly (Primdahl et al. 2004). We find that the perception of farmers and their role as landscape managers have been far too narrow in mainstream academic literature and most public policy approaches; an assertion which we will discuss in the following sections. However, before we address the issue of the farmer as the primary agent in rural landscape management, we present a short description of the structural framework in which farming is operating.

'Agriculture' as the Landscape Manager

In most regions, 'rural landscape' means agrarian landscapes. The cultivation of crops, pastoral farming and forestry represent, in different combinations, the primary functions which affect natural processes such as the flow of water, sediments, wildlife and energy through the landscape (Forman and Godron 1986; Zonneveld 1995). Environmental issues such as flooding, soil and water contamination, soil erosion, decline in biodiversity and wild fires are closely related to the way agriculture has changed the landscape pattern. 'Agriculture' is therefore in focus when the causes of environmental problems are identified – often linked with intensification, including the increased use of fertiliser and pesticides, increased livestock density and the expansion of land under cultivation (Butler et al. 2007; Tilman et al. 2002; Stoate et al. 2009). However, the abandonment of agriculture can also be viewed as undesirable in relation to natural processes, since the abandonment of farming practices may result in increased erosion (in areas where terraces are no longer maintained, for example) or a decline in biodiversity linked to seminatural habitats which depend on extensive grazing (Bignal and McCracken 1996; Pinto-Correia and Mascarenhas 1999; Brouwer et al. 2008). Also, regarding the cultural aspects of landscape such as historical elements and visual character,

agriculture may be seen as the principal 'manager', and maintaining (traditional) agriculture is seen as a prerequisite for landscape conservation (Greenville 1999).

Within the well known framework of the 'driving force-state-response' model developed by the Organisation for Economic Co operation and Development (OECD 1999) and further developed by the European Environmental Agency (2006), agriculture is emphasised as a major 'driving' force in relation to the 'environmental state' of agricultural areas. Such 'macro' models with little or no emphasis on the agent can help us to understand how agriculture's landscape impacts may vary considerably between different farming systems and how different landscape patterns offer different opportunities for different agricultural systems. Consequently, different landscape patterns within the same region may be closely linked to different agricultural systems (Deffontaines et al.1995). Macro approaches also include analysis of global structural developments in agriculture where agricultural productions unit through processes of concentration become few and bigger and 'farmers' may be replaced by farm labourers working within a hierarchy of large corporations, which in turn may be part of even bigger multinational agro-food chains (Morgan et al. 2007).

Agriculture, however, is not the only driving force, which can change rural landscapes. A second factor, which affects a large proportion of rural landscapes, is urbanisation in various forms (Champion 2001; Antrop 2004). The traditional urbanisation process, i.e. population movement from rural areas to towns and cities, first and foremost affects rural landscapes when the process is linked to agricultural marginalisation. This is especially the case in remote regions with difficult conditions for agriculture. Population movement in the opposite direction (from the urban to the rural) is termed 'counter-urbanisation' and implies that incomers buy farm properties (dispensable for professional farms) or parts of these, with different implications for agriculture and rural landscapes. First of all, counter-urbanisation puts fulltime commercial farming under pressure by increasing land prices, which in turn forces full time farmers either to move out of the areas in question (or more often: prevents young fulltime farmers from establishing a business within the area) or to intensify/diversify the business, e.g. through farm shops or farm tourism. In both cases, the function of the landscape and ultimately the patterns of the landscape will change. Counter-urbanisation especially affects agriculture and landscapes in highly urbanised regions and/or in regions with highly attractive landscapes (Busck et al. 2006; Gill et al. 2010).

In sum, changing agricultural structures and different forms of urbanisation affect rural landscapes in ways which result in regional differentiations of rural landscapes (Murdoch et al. 2003). For the specific landscape, this means that different factors in various combinations must be included when concrete landscape histories are analysed. The primary factor, however, when it comes to concrete decisions and actual work is still the farmer in most of developed countries and in Europe clearly the key agent. In the following three sections, we discuss the farmer's landscape management performed through three different roles: as producer, owner and citizen.

The Farmer as a Producer

Traditionally, farmers perceive themselves as producers of food (plus fibre and energy) (Burton 2004). With production as the main focus, farmers' values and the way fellow farmers are judged are closely related to considerations about what is 'good production practice' and 'rational farming', and these professional values have a direct, intended influence on farmers' landscape management, as well as more indirect implications. A common indicator of farming competence is productivity, or the net profit (the so-called 'gross margin') per ha or per livestock unit. The producer will adapt to, as well as modify, the landscape conditions

depending on the market and available technology. If farmers operate larger farms with access to large machinery, they will probably expand the field size and remove 'obstacles' such as hedgerows, stone walls, and other small-scale elements. Similarly, farmers as producers will cease to establish or maintain certain landscape elements, such as ponds to supply drinking water for livestock or stock-proof stone walls, if the functions of such elements are no longer required (Agger and Brandt 1988; Baudry et al. 2000).

However, the producer's decision making is not exclusively based on economic rationality; other values are also part of the producer's individual set of values, which we may call the production 'morals', with reference to Bourdieu's concept of morals as a system of dispositions (Bourdieu 1977; Setten 2004). Thus, the farmer may be more interested in what the *appearance* of the farm symbolises than the specific economic outcome. Nassauer (1995, p.163–164) describes how farmers' aesthetic preferences for the landscape are linked to, 'the straightness of the rows, uninterrupted by weeds or water, their ever green colour and the neatly mown roadside that surrounds the field', that is to symbols of farm production and 'care'. Similarly, Egoz et al. (2001) show how conventional farmers' negative view of organic farming is partly because they consider it to be untidy management. Kizos et al. (2010) found that a motive among olive farmers to clear the understory in olive plantations, to prune the olive trees, and to maintain the terraces was to keep the landscape orderly and tidy. Thus, there are aesthetic norms associated with farm production and 'good farming', but they are by no means static. Thirty years ago, visible weed in a field was a sign of 'bad practice', indicating that the farmer was not thorough. Today, a low level of weeds may be perceived as rational, especially for the experienced producer, as it can be a sign that the farmer has not used excessive amounts of herbicides, thereby signalling a production practice that is both economically rational and sensitive towards the environment (Noe and Langvad 2007).

Farmers as producers may develop similar production practices which are partly determined by individual experiences and values, and partly by the physical and social context within which they produce. When the social context is included, the distinction between structural conditions for landscape management (as described in the first section) and the farmer as the manager becomes unclear. However, it seems meaningful to associate variations in farming practices within the same agricultural system with the farmers as agents, even if the same practices are shared by groups of farmers within the system. In this case, the concept of, 'farming styles' is central (Ploeg 1994). 'Farming styles' have been used to analyse differences even within specific systems (e.g. dairy farming). The farmer decides to develop the production within the confines of his or her set of values and understandings of what constitutes good farming practice. Each farming style may or may not be more economically attractive than the next, but decisions and farming practice undertaken by the farmer may be justified by his or her personal set of values. A dairy farmer, for example, may decide to stock many cows each of which produces an average amount of milk, whereas another dairy farmer, with a different farming style, may focus on high milk production per cow. The literature on farming styles discusses whether a style is individual or developed collectively amongst a group of farmers. Farming styles are mainly focused on rationales within production, but because decisions within the production influence the landscape, some researchers have made attempts to relate farming styles to variations in landscape impacts (Busck 2003; Schmitzberger et al. 2005). Some relations have been detected, e.g. a farming style, which emphasises the use of large machinery as the main means of 'good and rational farming practice' may discourage the farmer from leaving small biotopes in the fields because they are perceived as obstacles to large machines.

Farmers' decisions, values and arguments are, however, not static and this may be seen as one of the weaknesses of the farming style approach. Indeed, they may vary over time due to changes in the overall norms of the farming community or society. Furthermore, they may

also change due to the life cycle of the farmer and the farm. The rationale behind this type of thinking is that all farmers go through different stages in relation to their agricultural production during the course of a life time: first a build-up and consolidation phase when many changes take place, followed by a phase of stability with few changes and ending with a phase characterised by downscaling the production with extensification being the dominant trend (Potter and Lobley 1996). The impact of farming on the landscape is likely to differ during such phases. For example, in a farming area with sandy soil conditions, Kristensen et al. (2004) found that hedgerow planting activities were highest among farmers in their 30s–40s (in the consolidation phase) and lowest for older farmers, whereas the abandonment of land was much more common among pensioners or farmers close to retirement. Similarly, Potter and Lobley (1992) found that older farmers had more extensive land use practices than younger farmers. The presence of a successor to take over the farm may, however, results in a different pattern: a high level of investment and expansion throughout a longer life cycle with different implications for the landscape (Potter and Lobley 1996). If there is no successor in the family, the older farmer who is downscaling, may also change focus from production values to amenity landscape values.

Closely linked to the concept of farming styles are other avenues of research which assume that farm households with shared socio-economic characteristics in general are likely to implement similar landscape management practices (Potter and Lobley 1992, 1996; Battershill and Gilg 1997; Kristensen et al. 2004).

The Farmer as Land Owner

When no land is leased, the producer and the owner is the same person. In this situation, there may still be quite different rationales behind the farmer's management decisions taken as the owner compared with those taken as a producer. Whereas decisions made by the latter are often short-term and guided by market adaptation and profit optimisation (with a moral bearing included as described above); 'owner decisions' may be more value driven and closely linked with the long-term management of the farm property as a family and/or an economic asset (Lambert et al. 2007). In most European contexts at least, the economic value of a farm property is not solely determined by its production potential but also by its attractiveness as a place to live, while in the case of agritourist activities, by its potential as a place for tourists to visit. When a farmer manages his or her property as a living place, the focus is on the overall aesthetic aspects, on recreational interests (horse riding, hunting, fishing, wildlife, etc.), and on the functions and quality of the areas close to the farm house (Busck 2003; Primdahl et al. 2004). An example can illustrate the significance of such management decisions linked to the farmer as an owner (see Figure 1). Farmers in a Danish study, who had recently planted hedgerows (typically mixed deciduous trees and shrubs) where asked to indicate their different motives for each hedgerow on the basis of an array of 11 potential motives. The four most frequent motives mentioned were: 'nature', 'aesthetics', 'shelter around the farm house' and 'hunting' – all motives, which are related to the farm as a property and as a living place. 'shelter for the field' (a motive related to the farm as a unit of production) was mentioned as the fifth most frequent reason (Primdahl et al. 2004). To understand the intentions behind hedgerow plantings, it is therefore necessary also to think of the farmer as a property owner. A recent follow-up survey of this study confirmed the more general significance of this. Farmers were asked how they see their farm property with three response options: (i) primarily as living place; (ii) primarily as a place to produce; or (iii) an equal combination of the two motives (Figure 2). About two thirds mentioned the first options as their primary motive (4% production place, 29% combined motives) representing 44 % of all farmland and with significant

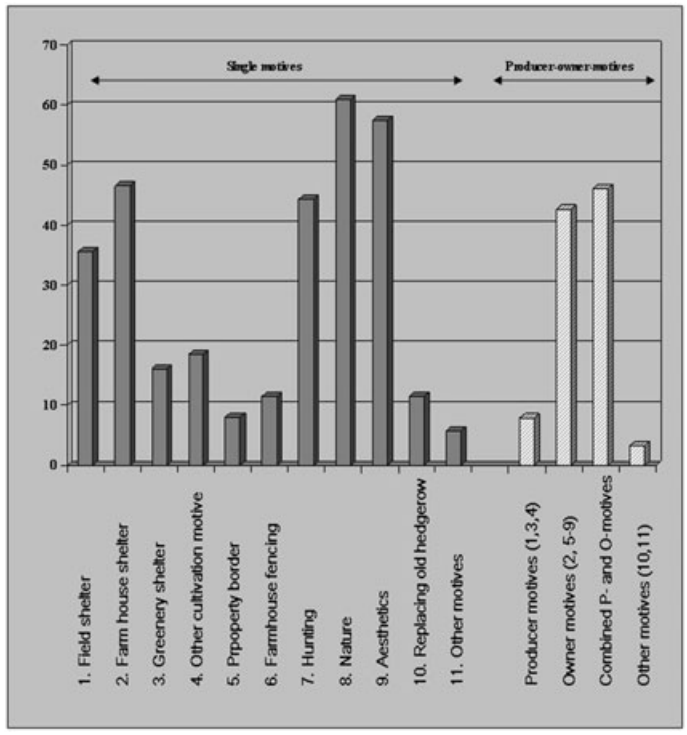

Fig. 1. The figure shows farmers' motives for hedgerow planting in the Hvorslev–Bjerringbro area. Based on interviews of 93 farm owners who during the period 1991–1996 had planted approximately 38-km hedgerows. After Primdahl et al. 2004, p. 110.

Fig. 2. Danish agricultural landscape in the Hvorslev–Bjerringbro area, Denmark. What appears to be an intensively farmed production landscape is also a residential area. When asked about their primary motives to own the farm, 67 % of the farmers see their farms as a 'living place' compared with 4% who see it as a 'production place' and 29 % who see it as an 'equal combination of the two motives'. The farmer's landscape management should be understood in this context.

different landscape management practices concerning the creation of new uncultivated landscape elements in general (Primdahl and Kristensen 2011).

On 44% of all farms within the European Union (EU), the land is leased (heritable long-term leaseholders not included) often on a short-term basis (from one to five year) and the owner is, therefore, not the producer of the land (Eurostat 2007). Despite the fact that the land is farmed by somebody else than the owner (a producer), the owner is often the principal decision maker concerning changes to the overall land use on the property (from woodlands to grasslands or land in rotation for example), to buildings and major corridor elements such as watercourses and hedgerows (Primdahl 1999). Hobby farmers (or 'lifestyle farmers') whose major income is derived off the farm, often lease the productive part of their property to full-time farmers; although we know from several studies that hobby farmers are active landscape managers (Munton et al. 1989; Lowe et al. 1992; Kristensen et al. 2004; Gill et al. 2010; Primdahl and Kristensen 2011). The farm owner is the key agent, especially when it comes to land use extensification (e.g. the conversion of land in rotation to forest or permanent grasslands) or the establishment of new uncultivated landscape elements (hedgerows, ponds, etc.) – which is often motivated by aesthetic considerations or an interest in wildlife, hunting or horse riding, to mention a few nonproductive motives. Also, pensioners are typical 'out leasers', but this does not mean that they are passive landscape managers as many are occupied with making the farm property ready for sale, possibly to future hobby farmers, and this often involves landscape changes. A special case, which involves separate roles for the farmer as a landscape manager, occurs when the owner of a farm pays workers to manage the farm property primarily as a living place. Duncan and Duncan (2003) describe how farm owners in a particularly beautiful landscape outside New York City pay illegal Mexican immigrants who live in a nearby town to maintain the pastoral appearance of the landscape. In this case, which may well be an example of an increasingly common situation in attractive landscapes on the outer urban fringe, landscape management is not only decoupled from production; the actual labour is also detached from the management decision maker. Separation of ownership and actual farm work is also the case on farms owned by large corporations, as is the case in large parts of North and South America and also to an increasing extent in Europe. In the state of Iowa, where non-farmers own about one third of the farmland, the overall effect (including the effects of the associated productivist trends in agriculture) according to Nassauer (2010, p.188) has been, 'a tangible disconnection between the physical landscape of farming and community well-being in Corn Belt Landscapes'.

However, not much attention has been given to the owner as a landscape manager in the landscape research literature or among policy makers, and there is no doubt that this 'double ignorance' is interlinked. In the final section, we return to the policy implications of this issue.

The Farmer as a Citizen – Community and Landscape

In the third role, we consider the farmer as a member of a community, a role which we have labelled 'citizen'. In this role, the farmer, like any other citizen, participates in community life, although farmers are far from 'average' citizens in respect to landscape due to their ownership and use of the majority of rural land areas. In the role of citizen, farmers may participate in landscape decisions and practices together with other members of a community in order to satisfy personal needs in a social context or to cope with common initiatives taken by the local farming community or the wider rural community. Furthermore, farmers may also act as 'citizens' on an individual basis – e.g. by providing public access to farmland or maintaining wildlife habitats. The latter may be driven by ethical motives or by a desire to be an appreciated farmer responsive to new demands from the society.

In most European countries, the farmer's role as a citizen is not new. Before the enclosure movement (in Denmark, before the late 18th and early 19th century), most farming operations and landscape practices were linked to the community and common decision making (Fritzbøger 2004). Also, during the early stages of agricultural modernisation, cooperation among farmers, especially in the Nordic countries, was widespread as part of the cooperative movement (Just 1994). Furthermore, landscape changes linked with land reclamation, drainage, irrigation, soil improvements, afforestation and the planting of hedgerows were conducted through more or less collective processes. However, in the later stages of the agricultural modernisation process, such cooperation has become less important but do still exist to some degree (Sutherland and Burton 2011) or has been institutionalised by large national or international cooperatives and by public policy schemes such as the rural development programme under the Common Agricultural Policy.

Today, there seems to be a renewed interest in collaborative action in rural areas, and experience with these types of initiatives has been widely documented (Luz 2000; Koontz 2003; Selman, 2004; Primdahl et al. 2007; Scherr and McNeely 2008). Collective initiatives are taken from local communities and from public bodies which promote collaborative projects in order to improve environmental outcomes, or because community based planning and management (collaborative planning and management) is seen as a way to deal with rural development in an age of complexity and uncertainty (Healey, 1997, 1998; Selman, 2004; Innes and Booher, 2010). The individual interest in managing the landscape as a citizen relates to two different motives. First, it may be in the farmer's own direct interest to coordinate his or her 'landscape practice' with the neighbours and other local property owners. Conditions for hunting and wildlife, for example, may be improved for all if farmers cooperate in the planting of woodlots, hedgerows and forests. Similarly, opportunities for horseback riding may be enhanced if networks of riding trails are established in cooperation across properties. More generally, production and farm property values may also be increased by such coordinated management practices. Second, the farm family may have more personal motives for joining collective types of landscape practices, e.g. because they want to be active (and appreciated) members of community life. This may motivate the farmer to become involved in local initiatives such as establishing a local trail system or the planting of a new 'village forest'. In this role, the farmer may accept recreational access through his or her property or he or she may participate in, e.g. a planting project by contributing with his machinery and expertise. The farmer may consider acceptance or direct participation as his contribution to the community. According to Michael et al. (1999), however, motivations for participation can also be distinguished in 'capacity-driven' motives, where the partnership is used as a platform for fund raising in order to compensate for budget shortfalls, and 'commitment-driven' motive, where partnership is used for activities which would only be feasible through collaboration.

The experiences of collaborative landscape planning and management cover a large series of activities and processes to get collaboration off the ground. Also, many different environmental issues are addressed, ranging from land and soil conservation to the protection, maintenance and creation of habitats and other landscape elements to facilitate recreational access to the landscape (Selman 2004). Some communities have become involved in landscape management on their own initiative. A number of local farming communities in Denmark, for example, have engaged in the development of collective nature plans for their neighbourhood in order to improve and protect habitat and heritage values and to enhance public access to and through the landscape (Primdahl et al. 2007). Others have been started through persuasion or incentives from externals bodies, e.g. nature conservation bodies, the state, local government or joint initiatives. Thus, a growing number of 'grazing associations'

have been established in Denmark. Some have been initiated with the support of the Danish Association for Nature Conservation, while others have been established by local community associations which have organised and carried out the grazing of valuable permanent grassland in cooperation with local farmers. Another example is the Dutch environmental cooperatives (or 'territorial cooperatives' as many of them are labelled now), which are characterised by new institutional relations between state agencies and the agricultural community. The cooperatives are established so farmers have more room for self-regulation, which might include local development and the implementation of new practices to realise environmental objectives (Figure 3). Overall environmental objectives are then negotiated between the state and the cooperatives, and the farmers then make decisions in cooperation about how to fulfil the objectives (Wiskerke et al. 2003; Franks 2008).

As an example of a government initiative, the Australian 'Landcare Program' represents an example of a government initiated programme for supporting voluntary community land and nature conservation groups. The programme has been operating since 1986, and in 2004, 4500 landcare groups were established involving 30–35 % of the farming population in Australia (Wilson 2004). The original targeted issues were soil conservation and enhancement of biodiversity. However, the programme had been broaden to include also landscape protection issues related to urban and coastal areas.

The new interest in landscape management practiced by local communities is partly linked to neoliberal deregulation (Lockie and Higgins, 2007) and partly to a growing interest in the 'place making' aspect of spatial planning (Healey 1998).

Policy, Farmers and Landscape Management

Historically, farmers' landscape management has been regulated through customary laws, legislation and other types of legal institutions (Olwig 2002; Jones 2005), and often different rights and duties were applied to the owner and the user.

Fig. 3. From the North Frisian Woodland, the Netherlands where about 700 farmers and 400 non-farmers are organized in a so-called 'territorial cooperative'. Through this association, the farmers participate in a number of landscape policy measures including hedgerow measures to support management of the many old hedgerows in this particular landscape. Farmers and non-farmers are also cooperating in a number of initiatives taken in the area including tourist and outdoor recreational projects.

Although customary law still plays a role in many countries, today, formal policy interventions such as land use legislation, incentives and advisory guidance are the dominant forms of regulation regarding farmers' landscape management. We conclude this paper with a brief outline of how these policy interventions are used (and potentially may be used) in relation to the three roles of the farmer as a landscape manager (see Table 1). Since this is not the place for a detailed comparative study of national differences, etc., we keep the outline to a general (mostly North European) level and we start with a key instrument: land use regulations.

Land use regulations in planning law, nature conservation law and national agricultural law are important for regulating buildings, land use and changes in rural land use (from cultivated land to grasslands, woodlands, natural habitats, etc.). The owner of the land in question is normally the legally responsible concerning these interventions which typically include protection of agricultural structures against fragmentation or urban sprawl, and the protection of habitat types such as salt marshes, moorland, old pastures, etc. against reclamation and agricultural intensification. As rural landscapes increase in multifunctionality including non-agricultural functions linked to counter-urbanisation and tourism, more/other land use regulations including expansion of recreational access rights are likely to be introduced together with more planning designations most of which will be regulating the farmer as an owner. The producer may be regulated through environmental legislation concerning emissions and the use of pesticides for example. In general, such regulatory measures can be effective in preventing changes which are considered undesirable, with effectiveness partly depending on whether the owner has the right to claim compensation in case his application is turned down. Farmers are, naturally, against restrictions on their right to farm and prefer to manage the landscape as they see fit. There is, therefore, an ongoing struggle over the specific limits of property rights (and sometimes 'duties') seen against the common good as well as conflicts between traditional rural land use right linked mainly to agricultural production and environmental concerns often articulated by urban groups (Bromley 1997; Lowe et al. 1997). Land use and landscape management plans (linked for example to village planning

Table 1. Type of interventions in relation to the three roles of a farmer.

High (+++) to low (+) relevance for the farmers	Type of intervention		
	Regulatory land use and environmental measures	**Incentives**	**Information, training, guidance**
Producers	+	+++	++
Examples	Fertilisation and spraying restrictions	Organic farming scheme, buffer zone scheme	Advice and training programmes, electronic hotlines
Owners	+++	++	++
Examples	Building regulations, major land uses (zoning/designations), protection of habitats, legal access rights	Extensive grassing scheme, cultural heritage conservation scheme	Courses on habitat management, folder on pond design
Citizens	+	++	++
Examples	Village development provisions, hunting right and game management	Collective planting schemes	Public expert support of collective landscape actions

or hunting as it is the case in many European countries) may be supporting collective actions and bring up therefore the farmer the farmer as a ' citizen'.

Support schemes have become important interventions in relation to landscape management. Agri-environment schemes to support the grazing of semi-natural habitats are common within the EU, as are schemes to ensure the proper management of hedgerows and various silvopastoral systems (Herman et al. 2001). In EU member states, these schemes have developed from almost nothing in the mid-1980s to cover more than 22% of the agricultural area in the 27 member states by 2009 (ENRD 2011). The establishment of a common food market and increased competition among farmers with the risk of either intensification or the abandonment of farming are the main reasons for these support schemes which involves farmers in all three roles as landscape managers. Three aspects of the schemes are of particular interest for farmers' landscape management. The first is the way in which such schemes affect farmers' perception of the role of farming. A couple of examples can illustrate this: the way farmers perceive themselves and their profession is challenged when they are paid to manage semi-natural grasslands by following relatively detailed prescriptions of the necessary management practices with the aim of maintaining or enhancing landscapes (Burton et al. 2008). Therefore, it has been proposed that such schemes should be more output oriented, thereby leaving room for the farmer to decide how to fulfil the objectives of the scheme through his own competences and creativity (Franks and McGloin 2007, Hodge 2001).However if the environmental quality (water, soils, biodiversity, landscape) becomes the basis for payments. a consequence may be that the owners become the key policy target as the expense of the producer since environmental quality in general is more linked to the land and the long term processes affecting this land than to agricultural practices, although some practices such as extensive grassing may also be crucial The second point concerns the way agri-environment schemes (today) are affecting the environment through the influence on the farmer's decision and behaviour. As farmers get paid for the cost incurred or the income forgone by meeting the requirements specified, causal relationships between these practices and the environmental outcomes becomes crucial. Several studies have shown that well-developed impacts of the causal relationships between farming practices and environment have not been underlying most agri-envrionmental schemes, and that well-designed evaluations of policy effectiveness are rare (Kleijn and Sutherland 2003; Primdahl et al. 2010; European Court of Auditors 2011). Improving evaluation and building in learning dimensions into policy design have been suggested as ways forward for these types of subsidy measures (Finn et al. 2009). The third point has to do with scale. Traditionally, subsidy schemes have been targeted farmers (in the roles of both producers and owners), as individual agreement holders and the individual field or holding have been the basic scale on which these subsidies are functioning. However, as most environmental processes are functioning at larger scales (including landscape scale) there have recently been calls for collective agreements (European Court of Auditors 2011). This brings the farmer's role as a citizen in focus and some of the Dutch territorial cooperatives described above are in fact operating schemes to some degree collectively.

Finally, there is the issue of more soft policy instruments to support farmers' landscape management. Information, education and cooperation/networking represent a whole array of ways to support farmers' landscape management (Gobster et al. 2007), which appeal to all the three roles the farmer performs as a landscape manager: producer, owner and citizen. In fact, the rural landscape is an excellent meeting point for public authorities, rural communities and farmers since the landscape is, first and foremost, cultivated and maintained by farmers and at the same time many of the services and values associated with rural landscapes are 'demanded' by society including the local community (Vejre et al. 2012). Furthermore, the very process of running 'landscape projects' across individual properties may not only

contribute to improved landscapes – functionally and aesthetically – it may also contribute to community building.

To conclude, farmers' landscape management should be understood both as responses to externally driven changes linked to structural developments within agriculture and urbanisation process and as more personal motives to manage and change rural landscapes. For landscape research, it may be fruitful to understand farmers' landscape management practices focusing on the farmer in his or her three different, although partly overlapping, roles as a landscape manager: as producer, as owner and as citizen. For public agencies involved in policy and planning, all three roles should be included when types of policy intervention is considered and when the specific policies are designed, implemented and evaluated. However, it should be noted that farmers represent – as individuals and as communities and stakeholder groups – personal and social entities. The three landscape management roles dealt with in this paper should been seen as conceptual tools enabling a better understanding of these complex entities, but in the end it is the farmer who is the key landscape manager.

Short Biographies

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