

## **THEME 5:            IMPACTS OF THE LFA MEASURE ON THE ENVIRONMENT**

### **Introduction**

Agriculture's impact on the environment – on soil, air, water, biodiversity, habitats and landscape – is a result of farming systems and practices. Environmental impacts can be both positive and negative depending on the intensity of the farming system and the type of farm management practices adopted. Factors such as grazing regimes, type of grazing livestock, grassland management, type of cropping, crop varieties, crop rotations and the use of pesticides and fertilisers, are all important in determining whether agriculture has positive or negative environmental impacts. In general terms, low intensity farming systems (low input, low output) are associated with sympathetic environmental management, while more intensive and specialised farming systems (high input, high output) employing high yielding farming practices with a scarcity of more natural features are often associated with negative environmental impacts (Baldock *et al.*, 1994) In reality, high-input intensive agriculture and the least intensive types of farming can be associated with a wide range of systems and practices which have varying environmental impacts. Whereas intensity does not necessarily imply environmental damage, a higher intensity of farming practice is normally associated with greater environmental risk. Therefore, it appears justifiable to use intensity as a proxy for the environmental performance of farming.

The intensity of farming systems is often a reflection of natural conditions such as soil, climate, the angle of slopes and accessibility. Most low intensity farming systems can be found in areas where there are severe physical constraints on intensification, particularly in upland and mountain areas, drier zones and the relatively small area of wet soils that have yet to be drained. In some regions, the constraints are less physical and more socio-economic. This may be because the land is inaccessible, remote from the market or in such fragmented ownership that intensification is impractical. The location of low intensity farming systems correspond to many of the areas classified as LFA according to the analysis presented in this chapter. This is not surprising given that the LFA measure was introduced in recognition of the physical and socio-economic constraints on agricultural production facing farmers in some parts of Europe.

Question 13 requires consideration of the extent to which LFA payments have contributed to environmental protection or degradation, particularly in relation to biodiversity and landscapes. The extent to which the requirement to respect Good Farming Practice (GFP) in order to receive the LFA payment has contributed to

protecting or enhancing the environment is considered in Question 14. Question 15 seeks to understand the extent to which the LFA measure has worked in synergy with other CAP measures or been in competition with them in relation to environmental impacts. Question 16 incorporates Question 12 and considers the extent to which the implementation of the LFA measure has contributed, in an efficient way, to matching the main needs identified in terms of land use management and environmental sensitivity in rural areas of the EU.

As with Theme Four, there are considerable difficulties in developing the analysis relating to this Evaluation Theme. One of these is the challenge of clearly establishing the causal link between the LFA measure as implemented in practice, its impacts on farming systems and practices, and the subsequent environmental impacts. This is further complicated by the difficulty of separating the effects of the LFA measure on the environment from other policy measures, including, for example, Pillar One support, agri-environment and other rural development measures, or external factors, for example, market prices or social change within rural areas. Many farmers receive several different payments that affect decisions regarding farming systems and practices, and hence the environmental impacts that result from these. Where possible, the impact of the LFA measure on the environment compared to other policies and factors is identified but not necessarily quantified. Questions 13 and 15 ask for overviews for the period since the measure was first applied, but information is lacking for the early years of LFA implementation. Most evidence of the historical environmental impacts of the LFA measure is derived from the literature and case study reports, and consistent data on other CAP measures is only available from 2000 onwards under the current rural development programming period. Ascribing impacts to measures applied in the different categories of LFA is also difficult under this Theme due to the lack of disaggregated data.

### **Contribution of LFA Payments to Environmental Protection and/or Degradation**

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| <p><b>Question 13.</b> <i>To what extent have LFA payments contributed to environmental protection (including landscape protection) and / or environmental degradation?</i></p> |
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#### ***Introduction***

This section begins by reviewing evidence for the relationship between farming and the environment and examining the main threats to the farmed environment. This is the background for considering the environmental characteristics of areas classified as LFAs and farms receiving LFA payments. The relationship between the implementation of the LFA measure and the environmental outcome is then explored, looking at different aspects of implementation such as the classification of areas and use of farm eligibility criteria, and seeking to establish any causality over the period the measure has been applied.

## *Analysis*

To contribute to environmental protection farming systems have to be sensitive to specific local conditions and be based on appropriate practices. Evidence of agricultural and environmental trends in the LFA and/or low intensity farming systems and farmland in Europe cannot be taken from any consistent database. A variety of sources offer appraisal of developments, often more qualitative than quantitative. These include case studies and expert interviews for this evaluation and a range of literature that is both national and multi-country in scope (for example CJC Consulting, 2003). Changes during 1990-2000 were assessed by the EEA in its work on agri-environment indicators. The IRENA (Indicator Reporting on the Integration of Environmental Concerns into Agriculture Policy) operation was a joint exercise between several Commission Directorates-Generals and the European Environment Agency (EEA) to develop 35 agri-environmental indicators for monitoring the integration of environmental concerns into the CAP in the European Union (albeit, limited to the EU-15).

Within the very extensive area of land classified as LFA there is a range of farming types stretching from high mountain pasture to intensively managed crops and irrigated areas. In France in 2000, for example, maize fodder crops accounted for about 1% of the area of mountain LFA farms, 8% of “simple” LFA farms and 24% of the less disadvantaged “Piedmont” LFA farms (CJC Consulting, 2003).

In the less intensively managed areas that comprise the majority of the LFA, farming has been undergoing a series of changes since the mid 1970s when the LFA Council Directive (75/268/EEC) was introduced. These reflect developments in agriculture as a whole – the introduction of new technologies and reduced labour input, growing scale of production and tendency to specialise, and adaptations to new market conditions. There was a growing use of agrochemical and inorganic fertiliser inputs, peaking in the mid 1980s in some Member States, later in others. Where there was investment in infrastructure it has focused more on enhancing productivity through drainage, irrigation, new roads, consolidation of parcels and greater field size than on more traditional landscape elements such as stone terraces, hedges, and vernacular buildings.

Some of these changes have occurred later and to a more limited extent in less intensively managed areas where yields and returns on investment are often lower. More traditional forms of management have persisted longer in some areas, for example in more remote locations and those where older or part time farmers play a prominent role. In the Mediterranean LFA regions, where small and mountainous farms are widespread, changes have occurred more slowly than in North West Europe (Caraveli, 2000).

### Box 9.1 HNV Farmland.

Most farmland and farming systems of High Nature Value (HNV) are found in areas with low input agriculture (Andersen *et al.*, 2004). Biodiversity generally decreases when the intensity of farming increases, in terms of nutrient and pesticide inputs, use of machinery and overall productivity. The most intensive arable and grassland systems have low levels of species diversity. The majority of HNV farmland consists of semi-natural grasslands and is managed under farming systems characterised by low stocking densities, low levels of agro-chemical inputs and often labour intensive management practices such as shepherding. Typical examples of HNV farmland are extensive grazed uplands in the UK, alpine meadows and pasture, steppic areas in eastern and southern Europe and *dehesas* and *montados* in Spain and Portugal. These low intensity farming systems are associated with a high species and habitat diversity or the presence of species of European conservation concern.

The European Environment Agency has made some progress in defining HNV farmland (EEA, 2004) and developed an indicator through the IRENA project that provides preliminary data on the distribution of high nature value farmland. Figure 9.1 shows the estimate of the distribution of HNV farmland in the EU-15 based on a land cover approach. This is taken from CORINE land cover data which is acknowledged to have drawbacks as an indicator of HNV farmland but is considered to be a reasonable prediction of the most likely location of HNV land. Figure 9.2 shows those areas of the EU currently designated as LFA (EU-15 only). Comparison of the two figures highlights a strong overlap between the distribution of HNV farmland and those areas of Europe classified as LFA. This reflects the predominantly low intensity farming systems in the LFA.

Four broad trends in farming with particular environmental significance are referred to frequently in the literature which may unfurl in concert or in isolation. They are characteristic of change in the LFA although have occurred on varying timescales in different places.

- 1) *Intensification* is characterised by higher stocking densities, the increased use of inputs such as pesticides, fertiliser and compound feeds, grassland improvement and greater use of mechanisation. This was marked in many areas where there was scope for increasing output in the 1970s and 1980s but has been less widespread since the mid 1990s. There were significant increases in sheep numbers in the 1980s in several Member States including the UK, Ireland, Spain and parts of Greece. This was followed by an overall decline in sheep and cattle numbers in the EU between 1990 and 2000, although livestock stocking densities grew by more than 10% in some regions during this decade. These included increases in sheep stocking densities in Southern Greece and Central Spain and increases in cattle stocking density in Southern France, Southern Italy and Western Spain. There are sizeable areas of LFA farmland in these regions.

In Greece, average stocking densities rose from 0.6 to 0.7 livestock units per hectare between 1985 and 1993, while the share of irrigated land in the LFA rose from 10 to 16%. In Italy irrigated land rose from 6 to 8% of the agricultural land in the LFA, contrasting with Spain and Portugal where the share of irrigated land fell slightly (Caraveli, 2000). Maize has been subject to increasing irrigation in France, Germany and Spain in the 1990s (EEA, 2005). On grassland there was a tendency to raise productivity by reseeding on better ground, changing species composition, increasing nutrient inputs and changing management practices. Haymaking once widespread in the uplands and mountains has been in continuous decline, giving way to silage production since the 1980s.

Reports of intensification in the LFA are now much less widespread, although the search for higher productivity goes on and many expect a higher level in Central and Eastern Europe as economic recovery takes place, new markets emerge and funding under the CAP increases (EEA, 2004). The move to decoupled rather than livestock headage payments within Pillar One of the CAP and to area payments under the LFA is a significant factor in stabilising or lowering stocking densities in several Member States (see case studies and CJC, 2003).

- 2) *Specialisation* is a decline in mixed farming systems, the concentration of production on one or few enterprises and less diversity of crop types, varieties and livestock breeds.
- 3) *Abandonment*. Data on outright abandonment is not readily available but insofar as it occurs, it is concentrated predominantly in the LFA where economic returns are low. It seems to have occurred more in the 1970s and early 1980s than recently and to have been most prevalent in drier areas of the Mediterranean (Spanish report, case studies, Caravelli, 2000). The social and economic transformation of farming gave rise to abandonment in parts of Central and Eastern Europe in the 1990s. In Spain, abandonment was most prevalent in the 1960s up to the mid 1980s but has been vastly reduced by the operation of the CAP. Smaller scale abandonment can be found in several countries at different periods, usually concentrated in more marginal farming areas with physical or socio-economic obstacles to modern agriculture, typically characterised by steep slopes, small terraces, wet areas without drainage and often located in remote mountain regions. Both arable land and mixed systems have been abandoned, often to be replaced by specialised livestock systems, plantation forestry or natural succession.
- 4) *Reduced Management*. In many of those areas which have remained under more extensive forms of management, farming practices have been adjusted to changing conditions/circumstances. In particular this has involved a lower use of labour resources, often leading to a simplification of traditional systems, such as the tendency to 'ranch' permanent pasture. In the least favoured areas, progressive marginalisation can occur, with the early stages of abandonment on the least productive parts of the farm. Examples drawn from the EEA 2005 report include:

- A decline in the diversity of livestock types and greater emphasis on productive breeds throughout the 1980s and 1990s.
- A decline of 25% in the total area of non-specialised livestock farms in the EU-12 between 1990 and 2000.
- A decline in transhumance and a move towards more sedentary livestock systems in many Mediterranean pastoral areas during the 1980s and early 1990s.
- Increases in invasive species. In Wales, for example, the area of bracken was thought to be advancing by 1 to 3% per annum in the early 1990s (Midmore *et al.*, 1998).
- A risk of marginalisation, due to economic and demographic conditions, was identified in the 1990 to 2000 period in Ireland, Northern Ireland, the south of Portugal and a large part of Italy, leading to the possible further abandonment of farmland.

The environmental impacts of these changes in farming systems and practices are diverse and less well researched and documented. However, the implications of these changes can be illustrated from the literature as follows:

- Little evidence exists on the precise effect of changing management practices on habitats and species. However, some attempts to assess the situation in the UK uplands have been made. Increased stocking rates and a decline in the traditional management of grazing land, for example heather burning, have led to a reduction in the extent of valuable heather moorland and heathland habitat at the expense of species-poor acidic grassland.
- The shift from hay making to silage is known to be damaging to the conservation of grassland as it leads to reduced species diversity, but the outcome of the change from hay-making to low intensity grazing in some regions as systems are 'run down' may cause less concern.
- Changes in stocking density can lead to both over and under grazing. Overgrazing results in loss of species diversity in severe cases and can be linked to problems such as soil erosion. Undergrazing can be problematic where it leads to scrub encroachment and tree growth on habitats of conservation importance.
- The simplification of livestock systems and their concentration on one type of animal (for example sheep in some areas) implies a reduction in the diversity of grazing and browsing patterns and hence in the vegetation structure.
- Changes in the type and breed of livestock can alter the management of semi-natural habitats significantly. Due to their hardiness and ability to exploit rough forage such as Atlantic heather moor or Mediterranean scrub, traditional livestock breeds are better adapted to the management of semi-natural

grassland. Modern improved breeds generally cannot graze less nutritious vegetation effectively or require supplementary feed to ensure adequate rates of growth.

- The decline in transhumance has implications for both lowland and upland areas, although little monitoring of these effects has been carried out.
- Abandonment has led to the loss of certain types of grassland and associated birds and mammals, but at the same time natural succession and reduced pressure from stock and shepherds in some places may have benefited some large mammals, for example, bear, wolf, boar and some raptors.
- The majority of farmland birds have suffered a strong decline in numbers from 1980 to 2002. This decline levelled off in the 1990s but species diversity remains at a very low level in intensively farmed areas. Data for important bird areas and Prime Butterfly Areas show that a significant share of these sites is negatively affected by agricultural intensification and/or abandonment (EEA, 2005).

In the UK, there is a considerable amount of research showing the environmental importance of the farmed uplands and mountains which form the most disadvantaged section of the LFA. The land farmed with the lowest intensity comprises mainly semi-natural habitats of conservation interest, including large areas of heather moorland for example. It has been estimated that 42% of the 90 vegetation communities found in the farmed uplands are of international importance and 12 per cent are listed in the annexes of the Habitats Directive (Thompson *et al.* 1995). Over one hundred bird species breed and feed in these habitats and there are large areas of landscape value (Midmore *et al.*, 1998). Low intensity agricultural management is strongly preferred as the form of management to maintain the conservation interest of these habitats (Ratcliffe and Thompson, 1988). A similar picture emerges at the European level for semi-natural vegetation subject to low intensity agricultural management. Although the data are much more limited, it has been estimated that more than half of Europe's most highly valued biotopes occur on low intensity farmland (Bignal and McCracken, 1996).

Environmental change in these areas is not entirely due to the dynamics of agricultural management. In several Member States, including Spain, Portugal, Ireland and the UK, there have been significant afforestation programmes at different periods causing a loss of established habitats at a local scale. Urbanisation is a factor in some areas, recreational pressure, such as skiing, in others.

Nonetheless, changes in agricultural management are of primary importance in altering vegetation communities, wider ecological values and landscape interest, as illustrated in the UK (see Box 9.2).

## **Box 9.2 Ecological impacts of management changes in grazed habitats.**

Scientific research in the UK has revealed some of the impacts of management, particularly intensification in the 1970s and 1980s. For example in England and Wales, examination of farm census data suggested that nearly half of moorland rough grazing had a stocking density of less than one sheep per hectare in 1977. This had fallen to about 7 per cent by 1989. The more heavily stocked moorland tripled in area over the same period (Thompson *et al.*, 1995). Enhanced grazing pressure results in changes in species composition and plant community structures, in many cases leading to the reduced prevalence of species of conservation concern. Semi-natural habitats become more uniform with subsequent impacts on the fauna – that for birds being best documented. Several species of conservation concern have experienced population decline especially moorland species for example hen harrier, golden plover and small ground nesting birds (Midmore *et al.*, 1998).

While the impacts of grazing pressure are complex and there are uncertainties about the degree to which different species can tolerate changes in grazing pressure, both intensification and the withdrawal of management can have significant effects throughout the ecology of farmed systems (Bignal and McCracken, 1996). This is perhaps the single most important environmental management issue in areas with semi-natural vegetation. In drier Mediterranean areas, soil erosion is more prevalent as a consequence of overgrazing, while the abandonment of farming can lead to enhanced risk of forest fires because of the growth of combustible vegetation.

Work undertaken at national level for this evaluation and the case studies provide evidence of significant variation in farm management and natural processes at different scales within the LFA. There is evidence, for example, of overgrazing in Ireland, intensification in Austria and agricultural abandonment in Italy and Spain at certain periods. The environmental impacts of these agricultural processes can be seen to have both positive and negative impacts on the environment. For example, extensification and, even to an extent, land abandonment in certain areas can give rise to positive environmental impacts by reducing pressure on soil, air and water resources and allowing certain habitat types and species to dominate. Conversely, large reductions in grazing pressure or the complete cessation of grazing can give rise to changes in vegetation that result in reduced habitat and species diversity. The scale, intensity and distribution of impacts will always be variable and these variations relate to differing physical, economic and social circumstances, the decisions made by individual farmers and the complexity of linkages between agricultural actions and environmental outcomes.

### ***The influence of LFA payments***

A combination of CAP and national measures influence agricultural management in the LFA. They are one strand in a web of factors affecting farm decision making and often it is difficult to distinguish their precise impact.

The LFA compensatory allowance has been offered alongside market support measures since 1975. These market measures have had a significant influence on the level of support offered for a range of livestock and crop products through price support, headage payments and other mechanisms. The analysis in Chapter Seven suggests that support for farms in the LFA is provided more from direct payments and market support mechanisms than from the compensatory allowance, but even if LFA payments constitute a small proportion of farm income, they may exert a distinctive influence on management decisions.

This potential influence is considered in relation to a number of sub-questions:

- a) How far have Member States classified farmed areas of potential environmental sensitivity within the LFA?
- b) Does the LFA include areas where the continuation of agricultural management is of environmental benefit?
- c) In so far as the LFA measure has contributed to the viability of farming, has this encompassed specific types of farm where continued management is of importance environmentally?
- d) Has the combination of eligibility rules, payment structures and levels been targeted at environmental priorities?

The related issue of the influence of Good Farming Practice rules is considered under Question 14.

a) *Classification of LFAs in relation to the environment*

Member States can classify up to ten per cent of their LFA under Articles 16 and 20 – areas with environmental restrictions and areas with specific handicaps respectively – of Council Regulation 1257/99. Of the total area of UAA classified as LFA, only 0.8% was classified under Article 16 by 2004 which includes that classified by Flanders in Belgium and six of the German federal states. Austria has established criteria for Article 16 but they are not yet used it in practice. This indicates that very few Member States have taken the opportunity to target LFA payments at areas of recognised environmental need and its principal utilisation to date has been in Germany.

Some Member States have used Article 20 to classify areas on the basis of environmental sensitivity or landscape factors. This is the case in Flanders, Germany, Spain, France, Italy, Austria, Finland, and Sweden. In 2004, only 5% of the total LFA was classified under Article 20 (which includes classifications under criteria other than environmental ones) compared to some 94% under Articles 18 and 19. The analysis in Theme One reveals that the criteria used by Member States to justify these classifications under Articles 18 and 19 are not explicitly environmental, although a number of farm level eligibility criteria introduced since 2000 have a potential environmental impact, including the proportion of land in permanent pasture, changes in the minimum and maximum stocking densities and the addition of environmental enhancements. This indicates that relatively few Member States have revised LFA classifications since 2000 or targeted classification to meet environmental objectives. The fact, therefore, that many areas classified under Articles 18 and 19 coincide

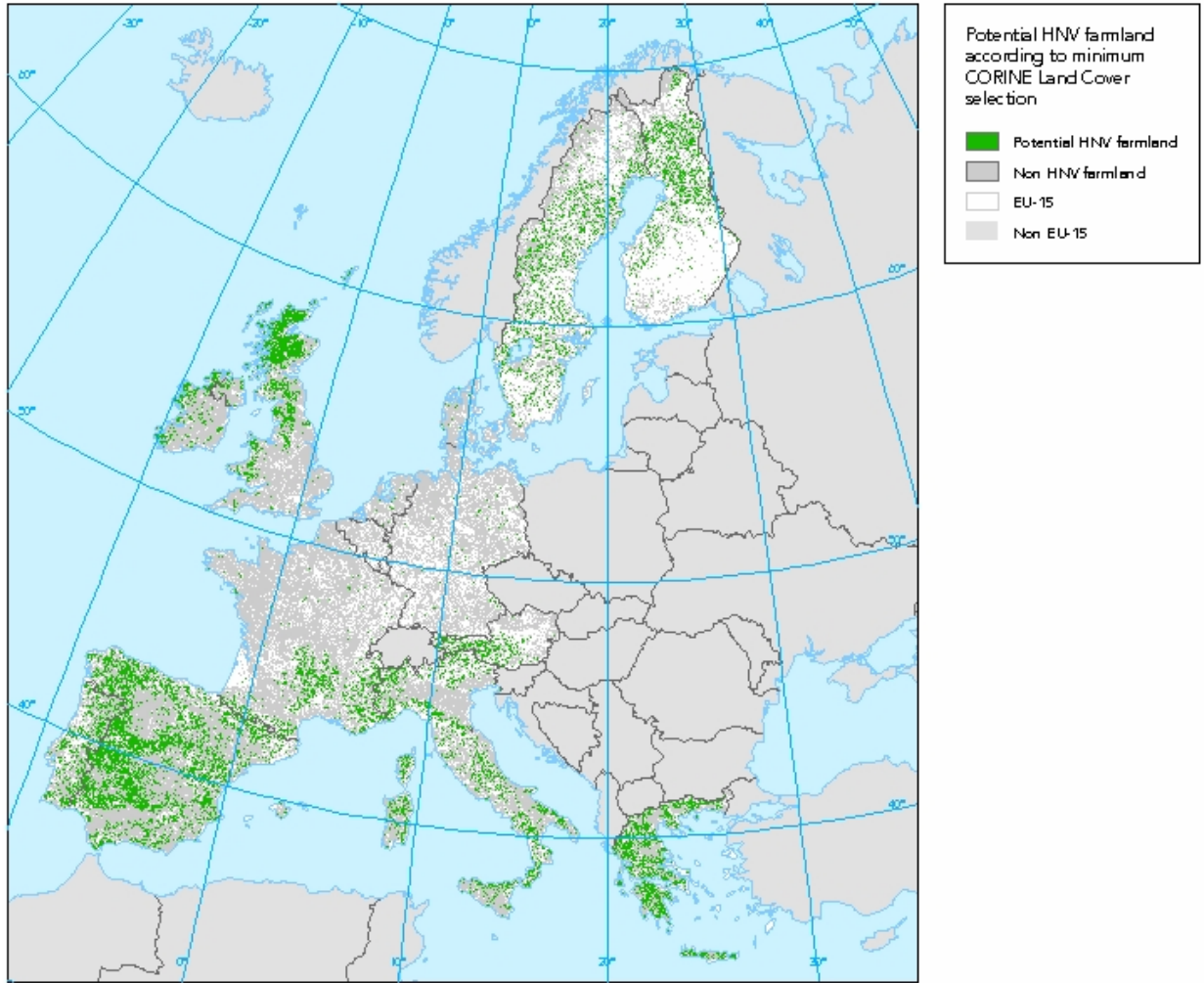
strongly with areas of environmental importance is a reflection of the coincidence between mountain areas, the types of farming targeted and environmental value.

A re-examination of LFA boundaries on the basis of environmental value would likely result in slightly different LFA maps being drawn. While it might be envisaged that many parts of the LFA, as currently classified, would continue to be LFA including large areas of HNV farmland, some inter-change between non-LFA and current LFA would also be expected. Significantly, some of the more agriculturally intensive – and lower nature value – parts of the LFA would be anticipated to fall outside of an environmentally re-focused LFA measure.

b) *Does the LFA include areas where the continuation of agricultural management is of environmental benefit?*

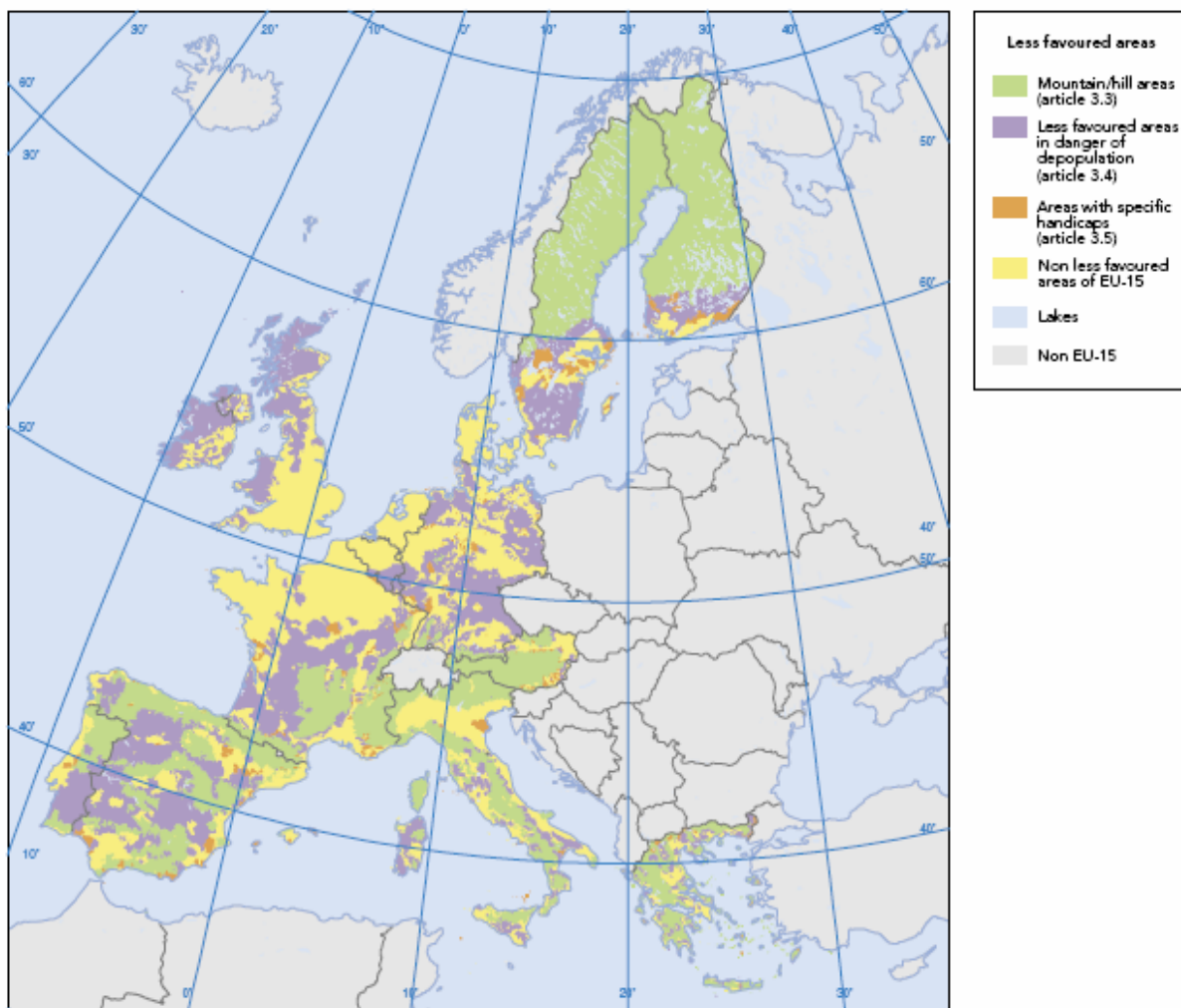
Since the principal objective of the LFA measure is to bring about the continuation of agricultural management this is an important question. There is no definitive scientific answer. The literature supports the view that continued agricultural management is the best means of maintaining vegetation communities and broader ecological processes on a range of semi-natural habitats, predominantly those subject to low intensity farming. These habitat types are concentrated in areas where the intensification of farming has not occurred, usually because of physical constraints. Hence there is a substantial overlap with areas subject to agricultural handicaps. This is demonstrated in the highly provisional map of HNV farmland (Figure 9.1), seen in relation to the current map of LFAs (Figure 9.2).

There is no comparable dataset for agricultural landscapes but it is clear from maps of protected areas in Europe that many of these are located in the LFA.



**Figure 9.1 Initial estimate of distribution of HNV farmland in Europe (EU-15).**

Source: IRENA Indicator Fact Sheet (EEA, 2005)



**Figure 9.2 Less Favoured Areas in the EU-15, late 1990s.**

Source: EEA, 2004.

The LFA covers both large areas of environmental sensitivity and others where management is generally too intensive to support conservation interest, for example where substantial irrigation or heavy stocking rates occur. The exact proportion of land where continued agricultural management is desirable in nature conservation terms is difficult to estimate but it is likely to include a large proportion of land classified under Article 18 and less of the areas classified under Article 19 – although many of these are of value, as illustrated above for the UK where upland farming is classified under this measure. Two caveats apply to this generalisation:

- Continued agricultural management supports environmental objectives in these areas if it is at an appropriate level of intensity.
- Variations in the structure and composition of habitats and their juxtaposition often contribute to conservation value. There are many areas where patches of woodland, scrub or abandoned land in a predominantly agricultural landscape

might enhance rather than detract from conservation value. Uniform agricultural management is not necessary or desirable in all locations.

In landscape terms it is more difficult to generalise at a European level. Many protected landscapes subject to agricultural management do occur in more mountainous or upland areas partly because farming is less intensive as well as the aesthetic appeal of the topography. Some landscape factors such as terraces and stone walls are particularly widespread in the LFA because of their association with traditional farming. There are areas where agriculture contributes to landscape values by contrasting with urban or recreational development. In others, the contrast is with predominantly forested landscapes. In Finland, for example, a high value is placed on the protection of open landscapes in a relatively flat terrain where forestry dominates land use. Agriculture is the primary means of maintaining these open landscapes.

As for nature conservation, agricultural management is not essential in every location to secure landscape value and there are areas in the LFA where landscape interests argue for greater tree cover, for example in parts of Scotland. In considerable areas classified under all four Articles, however, agricultural management does support landscape values.

For other environmental values, such as the protection of water quality, prevention of erosion and mudslides, control of vegetation creating fire risks, a pan-European appraisal is limited by the absence of data. Clearly agriculture of an appropriate kind can and does contribute to these environmental values in a range of areas in different Member States.

Inappropriate farm management on the other hand can contribute to some of the environmental degradation in the LFA, for example, where nutrients contaminate groundwater or excessive grazing pressure creates soil erosion. Forestry may offer an alternative form of management to supply ecosystem services such as clean water in certain areas. In others, agriculture is likely to be preferred, for example where vegetation management is required to control fire risks.

In conclusion, there are substantial areas of the LFA where the continuation of agricultural management contributes directly to environmental objectives – provided farm management is appropriate.

### *c) Continued management of different farm types*

The analysis in Chapter Seven suggests that the LFA compensatory allowance has made a contribution to the maintenance of agriculture although it makes up a relatively small proportion of farm income in large areas of the LFA. Until the advent of area payments under Agenda 2000, compensatory payments were paid predominantly in the form of headage payments and participation by farmers had been greater in livestock production than in other sectors. This orientation towards livestock farming support has been reinforced by the more concentrated use of the LFA measure in North West Europe (for example in Ireland, France, Germany and the UK) than in the Mediterranean countries along with the application of eligibility rules which excluded non-livestock farms from receiving an LFA payment.

This livestock orientation has resulted in the measure contributing more to the continuation of grazing and, to a lesser degree, hay making and other forms of fodder production than it has to arable cropping, permanent crops and more mixed forms of agriculture. Small scale mosaic landscapes found in parts of Italy, for example, are less well represented within the LFA than open grazed landscapes. Given the significance of continued appropriate grazing for maintaining nature conservation and landscape values, the LFA measure has been a highly relevant policy tool for addressing a key issue. The need, however, is for appropriate grazing patterns, not just the continuation of farming. This can be addressed by fine tuning the compensatory payments or by other measures. It has proved more difficult to achieve than maintaining farming, as is clear from the evidence reviewed earlier.

In environmental terms it would not be appropriate to focus LFA support on cropping systems and mixed farming enterprises unless these were generally low input given the pressures created by mechanised high yielding systems. Nonetheless, the limited representation of low input mixed systems in some regions of the Mediterranean may have contributed to the decline of these landscapes and greater uniformity in the farmed LFA.

The impact of the compensatory allowance on farm viability appears to have been greater not only in livestock areas but in some specific regions such as Finland where the maintenance of formal landscapes is a central issue. In some Member States, the compensatory allowance contributes a bigger share of farm income in mountainous regions than in the rest of the LFA. This is true in France for example, as shown in the case studies and other sources (see CJC Consulting, 2003 for example). Given the environmental significance of these areas, targeting of this kind, whether undertaken for environmental or for other reasons, supports a range of environmental objectives.

#### *d) The influence of eligibility rules and payment conditions*

These rules are determined partly at the EU and partly at the Member State level. Some are of direct environmental significance. For example, prior to 2000 the system of headage payments was subject to a limit of 1.4 LU per hectare under the relevant Community Regulations. Under the current Regulations Member States are permitted to set their own stocking density limits and several have no ceiling at all or have a combination of minimum and maximum levels.

#### ***Eligibility conditions***

Member States use a wide range of eligibility conditions, within the rules of Council Regulation 1257/99, to determine which farmers/farms should benefit from LFA support within classified areas. Annex 5 of the accompanying report to this evaluation (IEEP, 2006) lists the eligibility criteria currently applied by Member States while Theme One provides an analysis of these criteria. Several criteria, commonly applied by Member States, are likely to have little direct bearing on the environmental impacts of payments, including those which relate to place of residency, age, proportion of income from farming and economic size of farm.

The criteria which relate to farm size, stocking densities, production type or cropping restrictions are more significant from an environmental perspective because they are likely to have a more direct bearing on land management and the resultant environmental impacts. Stocking densities are more closely linked to environmental impacts although the actual impacts of livestock grazing at farm level will also depend on factors such as the timing of grazing, stock management and the type of livestock grazed. Many Member States apply minimum and/or maximum stocking densities with values ranging from a minimum of 0.15 LU/ha, as in Ireland and England, to a maximum of 2 LU/ha in the Simple LFA in France and where rainfall is greater than 800mm in Spain. In many countries, no maximum stocking density is applied thereby providing no constraint on the intensity of livestock production. It is likely that the specified stocking densities (or lack of them) will be too high or too low to maintain the environmental value of some habitats and species. This may contribute to environmental degradation through processes such as undergrazing and overgrazing. In other cases, however, it is likely that the imposition of such stocking densities will maintain the environmental value of habitats and species and hence such eligibility criteria will have contributed to environmental protection. Given the complex relationship between grazing pressure and the environment, the ideal situation would be to establish appropriate stocking densities at farm level according to the environmental conditions found there and the objectives to be achieved.

Finally, some Member States specify the type of production that is eligible for payments. Natura 2000 sites are subject to specific rules in several Member States – as would be expected. Manure spreading is banned on vulnerable nature zones in Wallonia. There are also examples of targeting under Articles 18, 19 and 20. For example, some German regions specify that only grasslands and pastures are eligible, and some Italian regions link support to continued livestock and forage production. In this way, LFA support can be targeted at types of production with environmental potential. Under Article 20 designations, the Netherlands specifies that applicants must:

- Not pursue activities that will have a negative effect on existing values of nature and landscape. This includes changes in parcelling, micro relief, soil structure and soil profile;
- Not pursue activities leading to a lowering of the groundwater level or a change in landscape elements.

Over 20 different active management measures are also specified, with very detailed criteria, depending on the objectives. Examples include the presence of certain species, land use, minimum and maximum area and soil cover.

This level of environmental specificity in eligibility criteria is not widely applied by Member States and represents a missed opportunity to strengthen the link between the objectives of the policy and its application.

### *Payments and payment conditions*

A wide range of payment conditions is applied by Member States. Annex Five of the accompanying report to this evaluation (IEEP, 2006) lists the payment conditions currently applied by Member States while Theme Two provides an analysis of these conditions. Payment conditions frequently take into account variables such as the degree of disadvantage, different types of LFA, production types and farm size. Denmark, the Netherlands and Estonia offer standard payments across all LFA types. Many Member States offer higher payments for an initial number of eligible hectares and many apply limits to the number of eligible hectares. This excludes significant areas of valuable habitat from support but there is little evidence that it is having a detrimental effect in terms of abandonment.

Many Member States, including Ireland, UK, Austria, Finland, Italy and Sweden, calculate payments according to levels of agricultural or production disadvantage with payments increasing according to the degree of that disadvantage. Some Member States, such as Greece, Germany and Sweden give higher payments for permanent pasture. A number of Member States apply specific environmental criteria to payment calculations. Conditions which are noteworthy from an environmental perspective include:

- Belgium (Flanders) – under Article 20 flat rate payments specifically set to compensate for the manure restrictions applied.
- Germany – some regions offer higher payments for the conversion of arable land to permanent pasture and for permanent set-aside on environmentally sensitive sites.
- Greece – offers higher payments for young farmers with a Green Certificate who have undergone technical training.
- Spain – limits the area of irrigated land on which payments can be made but pays a relatively high rate on this land.
- France – increases payments by 10% if at least 50% of the livestock mix is made up of sheep and goats and summer grazing is practised.
- Italy – offers an increase in payments for organic farming and land in natural parks.
- UK – Scotland increases payments if a greater proportion of cattle are in the enterprise mix. Wales and England both offer environmental enhancements, for example favouring suckler cattle.

The switch to payments per hectare from 2000 removed the incentive to keep higher numbers of stock than otherwise would be justified. This change corresponded to environmental requirements given the overgrazing pressures in some Member States, such as the UK and Ireland in the 1980s. However, the impact was weakened by the continuation of headage payments in the beef, sheep and goat regimes. These

payments were at a higher level than the LFA compensatory allowance. The switch to decoupled payments or partially decoupled payments in these sectors will remove this dichotomy.

In switching from headage to area payments, many Member States sought to ensure that there were few farms on which total receipts from compensatory allowances fell significantly. Consequently, several increased expenditure overall or adjusted payment regimes to cushion the impact of losses. In principle the shift in the basis of payments should have favoured farms with larger areas of land with low stocking densities at the expense of more heavily stocked farms. This is compatible with a greater focus on low input and HNV systems.

In practice, evidence gathered for this report, including the case studies, suggests that the impact was limited on the ground. Some decline in stock densities is anticipated, benefiting certain areas but potentially contributing to undergrazing in others. Some national experts suggest the overall effect is positive for the environment, in line with a similar view from another recent survey (CJC Consulting, 2003).

The extent to which payment conditions contribute to environmental protection and/or environmental degradation at farm level is likely to be variable. There has been some progress towards tuning payments to environmental conditions but it has been patchy and other objectives are prominent in the majority of Member States. Increasing the use of payment conditions geared to environmental goals may be one way to potentially enhance the contribution of LFA payments to environmental protection.

### *Conclusions*

There is a sizeable overlap between areas of high environmental value, especially those dominated by low intensity livestock production and areas currently classified as less favoured. Few areas have been classified specifically for their environmental value, however, and Member States have made limited use of Articles 16 and 20. Opportunities for more explicit targeting exist. In areas currently classified as LFA, the processes of agricultural intensification, specialisation, progressive marginalisation and land abandonment represent key threats to environmental value.

Several important environmental concerns are addressed by the continuation of agriculture per se but in most cases, the type of management pursued is also essential to meeting environmental requirements. The LFA measure has been part of a set of policies which have proved successful in maintaining farming but with variable results at the more specific land management level. The focus on livestock farms has helped to address the key issue of continued grazing on farms where profitability tends to be low and this is a major contribution to meeting nature conservation and landscape goals over a significant area. Other habitat types have benefited less from the LFA measure.

As the measure has developed over time, additional objectives concerned with sustainability and the environment have been added. Some Member States have responded by classifying new areas or altering eligibility rules and payment conditions. The majority, however have made relatively few, if any, steps in this

direction and sought continuity rather than a new focus, as confirmed by the response to the switch to area payments. Whilst it is unrealistic for the relatively simple LFA compensation payment to address the fluctuating dynamics of farming over a large area there is scope for greater tuning to the most widespread issues of intensification, specialisation and marginalisation. LFA payments could be more focused on enabling the survival of sustainable farming systems rather than agricultural management per se.

## **Contribution of GFP to environmental protection or enhancement**

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| <p><b>Question 14.</b> <i>To what extent has the requirement to respect Good Farming Practice contributed to protecting or enhancing the environment?</i></p> |
|---|

### ***Introduction***

The requirement for farmers to meet Good Farming Practice (GFP) standards was introduced under Council Regulation 1257/99. The Regulation states that farmers receiving a compensatory allowance must ‘apply usual good farming practice compatible with the need to safeguard the environment and maintain the countryside, in particular by sustainable farming’ (Article 14). The aim of GFP is to apply a baseline of environmental standards to be met by farmers in receipt of LFA and agri-environment payments. They are drawn up by Member States and should include verifiable standards. In principle, 5% of farmers are inspected each year to determine compliance with these standards and other requirements under the Regulation. GFP is meant to serve as a basic layer of standards aiming to protecting the environment or preventing environmental damage. The GFP standards established by Member States are reviewed here and evidence is sought on the effectiveness of these standards in protecting the environment.

### ***Analysis***

In assessing whether these requirements are contributing to environmental protection on the ground, it is helpful to establish:

- Whether GFP standards have been put in place.
- Whether they are relevant to the environmental needs addressed by the LFA measure.
- Whether farmers are aware of the standards and they are enforced by the relevant authorities.
- Whether there is any evidence that farmers have changed their practices in line with GFP standards and of impacts on the ground.

### *Application of GFP standards*

Information has been collected in the course of this evaluation by means of research at Member State level. There is no formal report published by the Commission on the application of GFP in the Member States. The results of this research are summarised in Table 5.1 of Annex Five of the accompanying report on Member State implementation (IEEP, 2006).

This research and that of others (EEA, 2005; CJC Consulting, 2003) confirms that all 25 Member States have established GFP standards, although rather late in some cases.

The standards are diverse in ambition and focus, and are generally selected from the existing body of environmental legislation with which farmers have to comply. As such, they almost invariably include mandatory obligations for farmers based on EU, national or regional legislation. In addition, some countries have included additional requirements, some of which are treated as advisory, some as mandatory. The standards are deemed to be verifiable at farm level and an inspection can establish whether the farm complies with GFP or if an infraction has occurred.

In most Member States, national binding legislation covers only some elements of what is considered GFP. For example, there is widespread legislation about inorganic fertiliser use, manure storage and the spreading of wastes on farmland. Soil management, over grazing, landscape management and crop rotation are rarely the topic of legislative measures.

Confining GFP standards to binding measures derived from national legislation, as many Member States have done, avoids potential confusion for farmers but reduces the scope of the measures, potentially adding less value. Work by the EEA suggests that the GFP standards of most Member States that have their whole territory designated as nitrate vulnerable zones (i.e. the Netherlands, Luxembourg, Austria, Denmark and Finland) are largely statutory (EEA, 2005). Greece and Portugal have followed a more advice-oriented approach in drafting their standards, half of which are not statutory. Although they include relevant national statutory standards, the standards of the two countries make a considerable number of recommendations on different spheres of agricultural activity, so the range of coverage is broad (see Table 9.1 below).

The Italian region of Emilia-Romagna, Spain, France, Ireland and Germany have chosen a mixed regulatory/advisory approach and their codes include both statutory and non-legislative standards in the form of pieces of advice or compulsory verifiable standards. In Germany, the standards are mainly based on national law on the use of fertilisers and pesticides, although there are recommendations concerning plant and soil protection which are for the most part non-statutory. The UK, where there are variations between the countries, combines relevant legal and complementary verifiable standards that go beyond legislation, for example in relation to the standards for grazing and hedge cutting. In effect, GFP incorporates an extension of statutory measures in some Member States, not in others.

### *Thematic coverage of GFP standards*

The broad thematic coverage of GFP standards is summarised in Table 5.1 of the accompanying implementation report (IEEP, 2006). Key headings to emerge from this survey are:

- Nutrient management.
- Use of pesticides.
- Irrigation.
- Soil management.
- Animal husbandry.
- Biodiversity and landscape.

More detailed examination of GFP standards by the EEA concludes with a similar set of themes and an estimate of the priority afforded to different categories of farming practices by GFP standards in different Member States – summarised in Table 9.1.

**Table 9.1 The degree of coverage of different categories of farming practices by national codes of GFP (2005).**

| <b>Farming Practices</b> | <b>BE<br/>FI</b> | <b>BE<br/>Wa</b> | <b>DK</b> | <b>DE</b> | <b>GR</b> | <b>ES</b> | <b>FR</b> | <b>IE</b> | <b>IT<br/>ER</b> | <b>LU</b> | <b>NL</b> | <b>AT</b> | <b>PT</b> | <b>FI</b> | <b>SE</b> | <b>UK</b> |
|--------------------------|------------------|------------------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Soil management          | ✓                | ⊞                | ✓         | ✓         | ⊞         | ✓         | ✓         | ✓         | ✓                | x         | x         | ✓         | ⊞         | ✓         | x         | ✓         |
| Water use – irrigation   | x                | x                | x         | x         | ⊞         | ⊞         | ⊞         | x         | x                | x         | x         | x         | ⊞         | x         | x         | x         |
| Fertilisation management | ⊞                | ⊞                | ⊞         | ⊞         | ✓         | ✓         | ⊞         | ⊞         | ⊞                | ⊞         | ⊞         | ⊞         | ⊞         | ⊞         | ⊞         | ⊞         |
| Pesticides management    | ⊞                | ⊞                | ⊞         | ⊞         | ✓         | ⊞         | ✓         | ✓         | ⊞                | ⊞         | ⊞         | ⊞         | ✓         | ⊞         | ⊞         | ⊞         |
| Waste management         | x                | ✓                | ✓         | x         | ✓         | ✓         | ✓         | ✓         | ✓                | ✓         | ✓         | x         | ✓         | ✓         | x         | ✓         |
| Pasture management       | x                | ✓                | x         | x         | ✓         | ✓         | ⊞         | ⊞         | x                | ⊞         | x         | x         | ✓         | x         | x         | ⊞         |
| Biodiversity & Landscape | ✓                | ✓                | ✓         | x         | ⊞         | ✓         | ✓         | ⊞         | x                | ✓         | x         | ✓         | ✓         | ✓         | ✓         | ⊞         |

Key: ⊞ = Priority issue; ✓ = issue covered; x = issue not covered

Source: Based on assessment of national/regional standards of Good Farming Practices included in Rural Development Programmes (RDPs) (period 2000-2006), IRENA Indicator 2 (EEA, 2005)

Most Member States have standards relating to the headings identified above with the exception of irrigation which is only a priority in all the Mediterranean Member States. While standards relating to nutrient management are established everywhere, the composition and force of the standards are particularly variable. Many Member States simply request farmers to abide by action programme measures arising from the implementation of the Nitrates Directive, or a set of guidelines or rules, while

others list in detail all the requirements related to closed dates, storage requirements and application guidelines, among others.

The relevance of the standards to the main environmental needs in the LFAs is a critical factor in the effectiveness of GFP. The overarching environmental need within the LFA is to the continued maintenance of an appropriate type of agricultural management to counter the main threats of abandonment, marginalisation and intensification which often lead to a loss of biodiversity and landscape value. There are two categories of GFP standards which can be seen to be tailored to this need: standards relating to input use and nutrient management which will curb the intensification of land management, and those relating to pasture management, a central land use in large parts of the LFA. Whilst standards relating to input use and nutrient management are widespread, pasture management is not treated as a priority in a majority of Member States with the exception of France, Italy, Luxembourg and the UK. Furthermore standards relevant to preventing the negative environmental impacts arising from reductions in agricultural activity, such as those associated with undergrazing and land abandonment, which are significant problems in some parts of the LFA are much less common. At the Member State level, there is some degree of targeting of standards to specific national and regional environmental issues, as is the case with Spain and Greece applying standards relating to irrigation and the importance afforded to soil management in Portugal and Greece where erosion is widespread. GFP standards address a rather generic suite of environmental issues with the purpose of maintaining a baseline of environmental condition.

### *Enforcement of standards*

The enforcement of standards is a critical factor in determining their effectiveness. The number of verifiable standards defined by Member States and regions for monitoring compliance varies widely. However, enforcement of standards is rather heavily reliant on a few, selective verifiable standards subject to regular on-the-spot inspections and that can be verified by the EU audit services as well as Member State authorities. In some cases, enforcement may be assisted by the availability of data from specialised control agencies visiting farms which participate in voluntary agri-environment schemes where GFP standards also apply. Administrative controls are also used in some cases, for example to check stocking density. Some standards have the merit of being relatively easy to control even if not always closely related to the environmental outcome illustrating that ease of control is not the only measure of effectiveness. In most Member States, the 'non-verifiable standards' are not subject to on-the-spot inspections, although the farmer is still obliged to observe the rules and is subject to possible sanctions by the appropriate authorities.

Some national officials and more independent stakeholders interviewed in the course of this evaluation felt that awareness of GFP standards by farmers was relatively high. Others were more sceptical and there is insufficient evidence to arrive at a balanced view.

Relatively limited data was available to national consultants on compliance with GFP at national level and there appears to be no EU level analysis of GFP compliance. Advisory standards are not generally subject to control and often are not expressed in

terms that allow implementation to be readily verified. Some information has been collected for Ireland, England and Northern Ireland, summarised as follows:

- In Ireland, the level of farmer compliance with GFP is apparently high; only 2.3 per cent of farmers inspected under the LFA scheme were found to be non-compliant.
- In England, the Rural Development Service identified 151 cases of over-grazing, 68 cases of unsuitable supplementary feeding and 48 cases of both between 1996 and 2006, mainly in the LFA.
- In Northern Ireland, there have been very few breaches of environmental conditions including Good Farming Practice by farmers within the LFA. According to the Mid-Term Evaluation report (2003) there were no breaches in 2000 or 2001. In 2002 there were nine breaches, all of which were first offence warnings, and in 2003 there were ten breaches, with penalties applied in two cases.

Interviews with stakeholders suggested that the GFP provisions had been helpful in improving awareness of and compliance with the standards in broad terms. The measures focus more on protecting the environment than enhancing it, as might be expected from the original objectives.

### *Conclusions*

Member States have defined a wide range of GFP standards that farmers in receipt of LFA payments must adhere to. Variation is not surprising given the differences in conditions and the lack of an EU legal framework. There is a mixture of standards derived from existing legislation and others that are often advisory in nature. If properly applied and enforced, GFP standards have the potential to raise awareness of environmental legislation among farmers and provide an incentive to comply with the relevant obligations or face sanctions and/or withdrawal of LFA payments. The emphasis is on meeting baseline standards. Awareness of GFP among farmers is difficult to judge but some of those interviewed regarded it as fairly satisfactory. The small amount of evidence available on compliance with standards makes generalisations difficult.

Overall, although comprehensive data on compliance levels are lacking, GFP appears to contribute to the protection of the environment in the LFA. The relevance and effectiveness of the GFP standards could be improved if they were more closely aligned with the specific environmental needs in the LFA, including grazing management, landscape and biodiversity. Some Member States rely too much on advisory standards not subject to farm level verification. It should be noted that, from 2007, GFP no longer applies and instead, LFA beneficiaries will be required to comply with cross compliance conditions (Article 51.1 of Council Regulation 1698/2005) or face a reduction or cancellation of payments. As with GFP, the standards need to be relevant to environmental needs and be adequately enforced if they are to be effective.

## Synergy of LFA Measure with other CAP Measures

**Question 15.** *To what extent has the LFA measure worked in synergy with other CAP measures, or been in competition with them, in relation to environmental impacts?*

### *Introduction*

This question takes the same form as Question 11 in Theme 4, but examines synergies and competition in relation to the environment rather than land use. A range of CAP Pillar One and Pillar Two policies are relevant to this analysis and these were described in response to Questions 10 and 11. This material will not be repeated here, rather the focus will be on the extent to which the LFA measure and other CAP measures are synergistic or in conflict in relation to their overall rationale, objectives, targeting and application. Budget issues are considered briefly as well. There is limited environmental data or scientific work on the varying impacts of different measures but evidence is sought from the literature, national studies and case studies.

### *Analysis*

In relation to support measures under Pillar One, there have been both synergies and conflicts with respect to environmental impacts. Synergies can be summarised as:

- Pillar One support for agricultural production, albeit taking different forms since 1975, has contributed to farm incomes in the LFA and hence to farm viability. Pillar One payments constitute a larger share of farm income than LFA payments on the great majority of farms according to FADN data (see Chapter Seven, Theme Three). Such support will have contributed to the continuation of agricultural management in the LFA and thereby to environmental outcomes that depend on such management (as discussed in Question 13 above). Examples include valued open landscapes, grazed semi-natural habitats and a range of landscape features such as terraces and stone walls. Since Pillar One payments are also received by a larger number of farms in the classified LFA than are compensatory allowances, the two measures have been complementary in relation to maintaining environmental benefits stemming from continued agricultural management.
- Prior to the introduction of decoupling for most Pillar One market regimes in the 2003 Mid Term Review of the CAP, there was production related support for a number of commodities. Some coupled support remains in many EU-15 Member States. The support has provided a direct incentive to continue certain forms of production, some of which is conducive to good environmental management in the LFA. Support for livestock production is the clearest example of synergies. Support for sheep, goats, and beef cattle was provided in the form of headage payments under Pillar One after 1992 as it was in the LFA until 2000. These headage payments were larger per livestock unit than

the LFA compensatory allowances in a headage form. The two types of headage payment worked together providing a greater level of support per animal in the LFA than in other areas. In combination, they led to livestock numbers being higher in the LFA than otherwise might have occurred. This contributed, on the one hand, to beneficial effects of ensuring the maintenance of grazing over large areas of relatively marginal farmland, whereas it resulted, on the other hand, in some areas in problems of over-grazing. Whilst stock keeping and grazing is not invariably the preferred form of land management in environmental terms it is often closely associated with the maintenance of valued landscapes and semi-natural habitats (OECD, 1996). Many of the areas of High Nature Value farmland identified provisionally by the EEA consist of predominantly grazed areas and the farming systems associated with them are largely beef cattle and sheep, although dairy cattle, goats and other stock also play a role (EEA, 2004).

- The introduction of cross compliance as a voluntary measure for Member States in the sheep and goat and beef and veal sectors in 1992 provided a policy instrument to pursue specific environmental goals. In the UK, one of a few Member States to adopt this measure, it was used mainly to control overgrazing on selected sites. Overgrazing had become a problem in significant areas of the LFA in some Member States and this is apparent in the case studies for Ireland for example. If more Member States had taken up the use of cross compliance in the 1990s it could have complemented the incentives offered under the livestock CMOs and the LFA.
- The mandatory form of cross compliance introduced under the Mid Term Review, including the GAEC provisions, as described in Question 10, complements the aims of the LFA measure regarding sustainable agriculture and preventing land abandonment. As noted in relation to Question 10, complying with GAEC can be expected to be associated with lower returns on more marginal land in the LFA. This disadvantage is linked to the handicaps of poor soils and adverse production conditions. Compensating for these through the LFA provides a way of assisting farmers with the challenge of maintaining holdings viable enough to continue management compatible with GAEC.

Conflicts have also arisen between the LFA measure and the Pillar One regimes with respect to the environment.

- Historically, the support system under Pillar One has been production linked, so channelling resources towards farms with high yields and greater livestock numbers per hectare. LFA farmers are less likely to be competitive and consequently more reliant on LFA payments to stay in business.
- There has been over grazing and damage to vegetation and soil in several Member States, predominantly during the 1980s. This was noted in several Member States both in North West Europe (UK and Ireland) and parts of the Mediterranean (Greece and Spain). It was particularly associated with a rise in sheep numbers in the EU, driven by the sheep and goat regime as well as market conditions. The combination of Sheep Annual Premium and LFA

compensatory allowances constituted an incentive to increase stocks on some farms well above historic levels. This pattern was far from even across Europe, however. Whilst in Ireland, sheep numbers rose from 2.36 million in 1980 to 6.10 million in 1993, and from 16.4 million to 24.5 million in Spain, over the same period the sheep population fell from 12.2 to 9.95 million in France (Baldock *et al.*, 1994). In the UK, sheep numbers rose by 79% between 1985 and 1993 with a corresponding decline in the area of 'rough grazing' of up to 150,000 hectares between 1978 and 1993 (Potter, 1998). This expansion occurred both outside and within the LFA. Expansion appears to have been driven more by the headage premia under the sheep and goat regime than LFA allowances, but the latter will have played a part. Data on the number of livestock units receiving LFA payments prior to 1988 is difficult to obtain. Between 1988 and 2000 when LFA headage payments ceased to be paid (except in transitional cases) there was no strong trend at EU level although there was an upward movement in total claims in some of the countries where overgrazing was reported, for example in Spain, Ireland and the UK. This increase took place between 1988 and 1992 and subsequently levelled off (STAR Committee, 1998). Some areas remain overgrazed, others undergrazed but the incentive to increase stock numbers has been removed with decoupling. This puts the focus on undergrazing as a potentially more important issue in the coming years.

- The combination of Pillar One and LFA payments has channelled resources into agriculture, making it more competitive with other land uses. In some cases, this has inhibited alternative land uses, such as nature reserves and forestry that might be more appropriate from an environmental perspective. Agriculture management is not required everywhere to achieve environmental goals.

In summary, the LFA measure has worked in synergy with Pillar One measures with regard to maintaining agriculture and supporting livestock systems in particular – in some cases to the extent of encouraging overgrazing. There have also been conflicts particularly where Pillar One payments were driving more intensive forms of production.

Since 2000, the underlying rationale and intervention logic for both Pillar One and LFA policy can be seen to have changed along complementary paths. Greater emphasis can be found in both policies now on the goals of sustainable agriculture and environmental protection.

Within Pillar Two, there is also some evidence (drawn partly from Questions 10, 11 and 13) of synergies and more limited conflicts between the LFA and other measures.

The objectives of the eight measures contained within Council Regulation 1257/99 are highly variable. The only measures which explicitly include environmental objectives are the LFA and agri-environment measures.

It is notable that the agri-environment measure is more ambitious in its objectives, referring to environmental enhancement and a much wider range of environmental attributes. In so far as LFA eligibility rules specify environmental conditions, which

are not very widespread, they are set out in general terms, usually applying to a whole region or country. Typically, they cover stocking densities, for example. By contrast, agri-environment prescriptions are more numerous, often more specific and generally tailored to local conditions.

In applying the LFA measure, some Member States have recognised possible links with agri-environment measures. For example, some adjust such stocking density requirements if the farm is in an agri-environment agreement. Both Ireland and England specify a minimum stocking density for the LFA of 0.15 LU/ha, but accept lower stocking densities under agri-environment agreements. This is a clear example of measures working in synergy in order to meet environmental objectives.

There is scope for both synergy and conflict between the LFA measure and that for Investment in Agricultural Holdings. In practice, investments may either be positive or detrimental to environmental objectives. In a positive case, an LFA farmer might access investment aid to improve manure handling facilities or erect buildings which enabled animals to be housed and grazing pressure reduced at critical times of the year, such as in winter.

Member States receive a fixed allocation of EAGGF funds for a programming period and there can be competition between measures, including the LFA, for a share of the funds. There is scope for synergies between measures as discussed in relation to Question 11 and environmental objectives can be assisted by appropriate combination of LFA and other measures, including for example, training, improved marketing and agri-environment. In other cases, the LFA measure could absorb resources which otherwise could be directed at a more environmentally sensitive measure. Criticism has been made of the LFA measure in Scotland, for example, on these grounds in the current programming period, (Dwyer *et al.*, 2002). More often in this programming period there has been an association between lower than average spending both on the LFA measure and the agri-environment measure. Greece, Spain, the Netherlands and Portugal fell into this category. Planned expenditure in 2000 – 2006 on forestry measures, where there is scope for environmental conflict, was most significant in Ireland, Spain and Portugal.

### ***Conclusions***

Most of the synergies and conflicts relating to the environment are similar to those arising with regard to land use (Question 11 in Theme Four). Relatively few CAP measures have explicit environmental objectives and where they do these are compatible with the LFA. The agri-environment measure is synergistic in that it requires more demanding and usually more specific commitments from farmers which build on the baseline of LFA requirements. These are orientated towards continued management rather than fine tuning of farm operations. Many farms are enrolled in both LFA and agri-environment schemes which appear complimentary rather than overlapping.

Afforestation of farmland represents a clear alternative to continued land use. There is potential for conflict with LFA aims and this has occurred but it should be avoidable with appropriate targeting of afforestation incentives.

## **Contribution of the LFA Measure to Land Use Management and Environmental Sensitivity**

**Questions 12 and 16.** *To what extent has the implementation of the LFA measure contributed - in an efficient way - to match the main needs identified in terms of land use management and environmental sensitivity of the EU rural territory?*

### ***Introduction***

Land use management and environmental needs are expressed by a range of actors stretching from the land managers and owners of individual farms to the EU institutions where priorities are set through legislation, strategies and other mechanisms. The interplay between public needs and those of private owners is continuous but shifts over time. There is no definitive statement of these needs or of how they have evolved over the lifetime of the LFA measure. However, changes in European policy do reflect the evolution of needs and will be taken as a benchmark for the purposes of this evaluation.

In an agricultural context, there has been a shift in emphasis from commodity production under early formulations of the CAP to a recognition of the multifunctional nature of agriculture from the Agenda 2000 CAP reform onwards. At the same time, growing awareness of the negative environmental impacts of some aspects of production, on soil, air, water, biodiversity, habitats and landscapes, has led to efforts to integrate environmental concerns into EU agriculture and rural development policy.

The analysis begins by reviewing European agricultural land use and environmental needs. The extent to which the LFA measure could contribute to meeting these needs – in an efficient way – is then considered, taking account of the wider analysis of the efficiency of the LFA measure presented in Question 10. Efficiency can be defined as the best relationship between resources employed and results achieved in pursuing a given objective through an intervention. The extent to which LFA objectives are aligned with land use and environmental needs is assessed followed by consideration of the effects of implementation of the measure.

### ***Analysis***

The broad policy objectives of sustainable development and environmental integration have been significant drivers of successive policy reforms within agriculture and other sectors in recent years and set a general framework for the publicly expressed environmental needs of rural areas in the EU. Within this framework, a number of

strategies, policy documents and legislative measures express public requirements more specifically.

Environmental needs have received more prominent recognition since the late 1990s. The European Council in Helsinki (December 1999) adopted the Strategy for integrating the environmental dimension into the CAP. The integration strategy sets specific objectives as: quality and balanced use of water, agrochemicals risk reduction, reduction of degradation of soil, climate change, air quality and landscape and biodiversity preservation.

The objectives of the LFA measure evolved following implementation of Council Regulation 1257/1999. The analysis below focuses on the period since 1999.

The present day LFA measure has a number of relevant objectives. These include maintaining and promoting sustainable farming which takes account of environmental protection requirements (Article 13 a) and safeguards farming in areas with environmental restrictions (Article 13 b). Article 16 is specifically concerned with compensating farmers for environmental restrictions most notably those arising in Natura 2000 areas.

These objectives give the LFA measure the potential to contribute to a considerable range of land management and environmental needs, notably where these relate to agriculture, agricultural landscapes and Natura 2000 sites. The objective of promoting sustainable farming is expressed in very broad terms and the LFA allowance is not conceived as a tightly targeted measure. It has the potential to support broadly appropriate forms of agriculture for example by setting eligibility conditions based on environmental requirements (such as stocking rates for grazing livestock). A well tuned specification of Good Farming Practice can potentially amplify the impact of the compensatory allowance. The objectives of Article 16 are clearly related to a very specific need in Natura 2000 sites where farmers are likely to face restrictions on their management which may cause either direct income losses, through restrictions on fertiliser use, for example, or less directly, on opportunity costs such as restrictions on future drainage of land. Compensation payments are consequently required to prevent farms from being disadvantaged in the short or longer term by designation within Natura 2000.

At the same time, there are limitations on the contribution that LFA payments can make to the range of rural needs because they apply only on farmed land and the payments offered must be based on compensation for handicaps affecting agriculture. In some cases, the maintenance of agricultural land, subject to conditions under GFP and national rules (which may include grazing requirements for example), will be sufficient to meet land management needs. The maintenance of valued open landscapes is an example where the continuation of farming might be the crucial requirement. In other cases, requirements may be more complex, for example maintaining a mix of land uses, renovating collapsing terraces, sustaining transhumance systems, or maintaining farm boundaries. The LFA compensation payments are not intended for this purpose and the focus on handicaps makes them inappropriate for this.

Maintaining land within agriculture is appropriate in many circumstances within the LFA because of the prevalence of HNV farmland and the need to maintain valued open landscapes, the benefits for the management of fire and mud slides in some areas, the opportunities offered for recreation and other needs. However agricultural uses of land are not required or appropriate in every situation. Mixtures of habitat may be preferable for maintaining biodiversity or landscape values in some localities. Forest or new energy crops may need to displace conventional agriculture in some areas. In sum, there are limits on the rural needs that can be met through a measure with the objectives embodied in the LFA, although it is relevant to a wide range of these needs.

Indeed, more than one policy is likely to be required to achieve the pattern of structural developments and management practices necessary on the ground to satisfy the full range and variety of needs. The type of decisions sought from farms and other land managers may vary between locations, depending on initial circumstances and requirements over time. In the agricultural context, a range of policy interventions have an influence on management choices. Consequently, the efficiency of a single policy measure, such as the provision of the LFA compensatory allowance, will be limited unless it is deployed in an appropriate combination with other instruments in the policy mix.

Support within the different categories of LFA is the only policy instrument available for maintaining the farmed countryside in specifically designated areas. Although land under Articles 18 and 19 was not classified on the basis of its environmental interest, these LFAs do include extensive areas of protected landscapes, HNV farmland and other sites of environmental concern. The compensatory allowance directly seeks to incentivise the required management at farm level and thus, has the potential to be more efficient than other payments made to farmers where the continuation of agricultural management is a central concern. Given the farm income effects specifically arising from handicaps in the LFA and the longer term threats of marginalisation, abandonment and alternative land uses, a policy measure providing incentives where they are needed seems appropriate. It is difficult to achieve the required land management through compulsion, even if the principle was regarded as politically acceptable.

Turning from the objectives of the LFA measure to its implementation in practice, its principal role has been to contribute to maintaining agricultural land use. Levels of abandonment appear to have been rather low and this, in turn, has contributed substantially to maintaining open landscapes and other outcomes where the continuity of land use is essential.

In respect to land management and the environment the LFA measure is efficient in some respects:

- The areas designated as LFA cover most of the areas of high nature value farmland indicating some success in applying the measure in areas of environmental need. However, this arises from the measure being targeted at agricultural disadvantage, rather than explicitly at HNV areas.

- The LFA measure works in synergy with a number of other Pillar Two measures which together contribute to meeting land use and environmental needs. The LFA provides a platform for maintaining a viable form of farming onto which more targeted measures can be added. For example a significant number of agri-environmental agreements are in place in the areas classified as LFA. Both policies apply on a substantial scale and LFA alone would not provide sufficient targeting.
- The standards applied through GFP, in many cases but not all, correspond reasonably well to the environmental needs and should, where effective enforcement and compliance occurs, contribute to environmental protection.
- A few Member States, such as England for example, have chosen to use their discretion over eligibility rules to target LFA support at explicitly environmental objectives. Similarly, a few have structured their compensatory allowance in such a way as to encourage certain production systems or forms of management which meet local needs (see Themes One and Two).

On the other hand, the LFA measure is not entirely efficient in meeting the core objectives of maintaining agricultural land use. This is discussed in response to Question 10 (Theme Four). There are some areas, for example, where LFA farm incomes are above those outside the LFA suggesting that compensation was unnecessarily high and it can be difficult to relate compensatory allowance rates to the severity of handicap.

As a measure to meet more specific land management and environmental needs it also has weaknesses:

- The application of Article 16, aimed at farms where there are restrictions on agricultural use stemming from EU environmental protection rules, has been on a very limited scale. Several Member States have established classification criteria for such LFAs, mainly based on Natura 2000 sites. However by 2005, only Belgium, Germany and Lithuania had designated Article 16 areas. This amounted to 607,000ha, of which nearly all was in Germany.
- Most Member States did not use the opportunity to adopt explicit environmental eligibility conditions when setting these at national level (see IEEP, 2006).
- In choosing criteria on which to weigh payments to farms under the LFA measure, most Member States did not select explicitly environmental criteria although several favour grazing livestock (see IEEP 2006 and Table 6.6 of this report). In some Member States, for example Spain, payment rates per hectare are higher on irrigated than on non-irrigated land, which is contrary to environmental needs.
- There is evidence that payment conditions applied by many Member States are weakly linked to the environmental objectives of the measure. In Wallonia, for example, stocking densities of up to 3.5 LU/ha are permitted before payment reductions occur.

- Some GFP standards do not correspond closely to the main environmental needs identified in the LFA or are irrelevant to those needs (see Question 14).
- There is weak enforcement or compliance with GFP standards in some Member States, potentially resulting in the environmental degradation of areas of high nature value (see Question 14).
- In some cases the measure competes with high afforestation grants.
- Some areas of environmental need are not classified as LFA (see Question 13).

### *Conclusions*

Whilst the main needs for appropriate land use management and environmental sensitivity in the EU's rural territory are diverse, some key themes of particular relevance to the LFA can be identified. These include:

- An appropriate balance between land uses, including agriculture, forestry, biodiversity conservation, recreation, new enterprises and living spaces. Changes will be required over time as needs evolve.
- Sustainable agriculture generating sufficient income and job satisfaction while respecting environmental requirements.
- Meeting EU goals for nature conservation, including the effective implementation of the birds and habitats Directives, and halting the decline of biodiversity in the Union by 2010.
- A broader integration of environmental objectives into land use management, reflecting the need to meet water quality standards, reduce emissions of atmospheric pollutants, assist the control of fires and other objectives.

The LFA measure is appropriately designed to maintain agricultural land use. In many but not all respects it is an efficient mechanism for pursuing this goal (see analysis under Question 10). In sizeable areas, continued agricultural land use is desirable because it is integral to the maintenance of High Nature Value farmland or traditional landscapes of value, or contributes to other goals such as forest fire prevention. However, agricultural land use is not the priority in all areas and the objectives of the LFA measure preclude its application as an instrument for pursuing diverse land uses where these are required.

The LFA measure has contributed significantly to maintaining farmland over a large area of land, a considerable portion of which is environmentally sensitive. The result has been achieved by a combination of measures and it is difficult to identify the precise role of LFA payments within the mix. There have been corresponding benefits for traditionally farmed open landscapes and HNV farmland. The long running emphasis on supporting farmed livestock has helped to sustain grazing systems,

although not always at the most appropriate stocking densities. Since the switch from headage to area payments in 1999, several Member States have chosen to favour grazed livestock through their eligibility and payment conditions. This corresponds to environmental requirements in most areas, although there are some where more mixed land uses would be preferable.

As an instrument for achieving more specific and locally attuned forms of environmental management the LFA has made a much smaller contribution which is also difficult to specify precisely. Eligibility criteria have not been used very systematically to pursue environmental goals in most Member States and the same is true of payment structures. In some cases more intensive land uses, including irrigated areas, receive larger payments per hectare than more extensively managed land of greater environmental value. Good Farming Practice rules could be analysed more closely with environmental needs in the LFA. Whereas there is the potential to use the LFA measure to meet environmental needs more efficiently, this would require a more focused implementation within the Member States.

Efficiency could be enhanced by:

- Improving the targeting of the areas classified as LFA to areas where the environmental need is greatest.
- Adapting eligibility criteria, and payment strategies and conditions to ensure the right recipients and forms of land management are being targeted, that incentives are only provided where needed, and over compensation is avoided. Spatial and environmental planning may support the targeting process e.g. identifying HNV areas or mapping zones where forestry would be an appropriate land use.
- Ensuring GFP standards (or cross compliance from 2007) focus on key environmental problems and are effectively applied and enforced.
- Strengthening the synergies between rural development measures in order to ensure land use and environmental needs are met, for example, adjusting eligibility criteria or payment conditions.
- Avoiding conflicts between measures by applying environmental conditions equally across all measures (and not just LFA and agri-environment).

## **Overall Conclusions**

Many areas of high environmental value particularly for landscape and biodiversity fall within the LFA. There is a relationship between handicaps that constrain agricultural intensification and these positive values. Vulnerability to soil erosion, fire or other hazards is a feature of some areas as well – so appropriate management is required. There is evidence of both positive and negative environmental trends within the LFA arising from the processes of agricultural intensification, specialisation, progressive marginalisation and abandonment. Preventing environmental degradation

and securing environmental protection and enhancement are key objectives for future policy.

The continuation of LFA and other measures has made a major contribution to meeting environmental goals, particularly relating to livestock farming, by incentivising continued management. This will continue to be relevant in future because of the importance of semi-natural habitats and other features in less intensively farmed areas.

Few areas have been classified as LFAs specifically for their environmental value, however, and Member States have made limited use of Articles 16 and 20. There is an opportunity to review the classification criteria to improve the targeting on environmental policies such as High Nature Value farmland and the most valued open traditional landscapes.

As the goals of the LFA measure have shifted to give more emphasis to the environment and sustainable agriculture, adjustments to eligibility rules and payment structures within Member States would have been expected. These have occurred on a relatively limited scale however and there is a need to raise the level of environmental ambition of implementation measures. These should be supported by GAEC standards that address key issues in the LFA, such as appropriate grazing regimes and irrigation management when cross compliance replaces GFP in future measures.

Policy adjustment could both improve the efficiency of the measure by better targeting and help to secure appropriate land management in addition to continued agricultural use.