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**Environmental Effects of the Common Agricultural Policy
and Possible Mitigation Measures**

Prepared for the Department for Environment, Food and Rural Affairs
by the Joint Nature Conservation Committee
on behalf of the
GB statutory conservation, countryside and environment agencies

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1 Introduction

- 1.1 Under the Agenda 2000 reforms of the Common Agricultural Policy (CAP), Article 3 of Council Regulation (EC) No 1259/1999 (the Horizontal Regulation) stipulates that all future regimes and direct aid schemes under the first pillar of the CAP must be developed in compliance with environmental standards. As a result, Member States are required, under recent EU legislation (Article 2 of Commission Regulation (EC) No 963/2001), to report annually to the European Commission on the effects of CAP direct aids on the environment, and the measures that have been taken to mitigate these effects.
- 1.2 In October 2001, the Department for Environment, Food and Rural Affairs (DEFRA) submitted a first report to the Commission. This focused on some of the most serious environmental impacts caused by livestock and arable farming in the UK, and the application of overgrazing and set-aside cross-compliance measures. A fuller report on the environmental effects of CAP direct aid is due to be submitted by 30 April 2002.
- 1.3 EU legislation on the sugar regime also requires Member States to assess the environmental effects of sugar beet cultivation and to report on mitigation measures. This report is due to be submitted to the Commission by 30 June 2002.
- 1.4 In late 2001, DEFRA asked JNCC to produce a short report on the environmental effects of direct aid schemes under the CAP, and possible future policy measures that might be implemented to mitigate these effects, including potential improvements to existing measures. DEFRA requested that this report should also cover sugar beet cultivation. It was agreed that JNCC would co-ordinate input from the other statutory conservation, countryside and environment agencies (English Nature, Countryside Council for Wales, Scottish Natural Heritage, Countryside Agency and Environment Agency).
- 1.5 The new legislation requiring DEFRA to report on these matters to the EU will have a long-term effect on DEFRA's responsibilities. The conservation, countryside and environment agencies are eager to have an input into this process on a regular, annual basis, and responded positively to DEFRA's invitation to contribute to the 2002 report. However, due to time constraints, this year the agencies' contribution takes the form of a list of possible mitigation measures without further detailed assessment of the implications of each measure or discussion of the overall objectives of the proposed changes. The agencies propose that from this year onward they should have continuous involvement, in consultation with DEFRA, with the reporting process in order to produce a considered, complete document.
- 1.6 It must be stressed that this report is a list of mitigation measures that could possibly be applied in the UK, and is not a statement of policy position on behalf of the agencies. The list draws on a wide range of contributors. All of the ideas set out in the report require a considerable amount of further assessment before beginning implementation. Some of them, on closer inspection, may conflict with the approved policy position of one or more of the agencies.

2 Methods

- 2.1 This report was commissioned by DEFRA along with two complementary studies: a literature review of the environmental effects of CAP direct aids and the cultivation of sugar beet (undertaken by the Central Science Laboratory (CSL)), and a study to provide an initial mapping of the potential environmental effects of CAP reform (undertaken by GFA-RACE). The report is not intended to duplicate any of the work in these studies but to provide an assessment of the issues from the perspective of the conservation, countryside and environment agencies.
- 2.2 Preparation of the report was initiated at a meeting of agency representatives on 4th January 2002. Officers from DEFRA and the Scottish Executive were also present. It was agreed that the work would be divided into two parts:
- A summary of the negative environmental effects of CAP direct payments and the sugar beet regime
 - Identification of potential mitigating policy measures to counteract these effects
- 2.3 Following discussion at the 4th January meeting, it was agreed that the report should also cover the dairy regime, although this is not currently supported by direct payments. However, direct aid schemes which have a minor impact on the environment in the UK (e.g. hops) have not been considered. A broad definition of 'environmental' has been adopted, including landscape and cultural heritage as well as biodiversity and ecosystems.
- 2.4 The summary of environmental effects began with a discussion at the meeting on 4th January. The arable, sugar beet, lowland livestock, upland livestock and dairy sectors were discussed in turn, and a list of categories of negative environmental effects was drawn up for each sector. Further text expanding on each of these categories was derived from communication within the agencies and from a variety of other sources, including the GFA-RACE and CSL studies and past Land Use Policy Group (LUPG) research reports. Cross-sectoral issues were summarised at the end of the list. The final list was circulated to the agencies for comment. The summary of environmental effects has been presented in tabular form for accessibility. Brief notes on existing policy measures to mitigate the effects have been included in the tables alongside the appropriate categories.
- 2.5 Article 3 of the Horizontal Regulation lists three categories of mitigation measure: cross-compliance (i.e. conditions attached to direct payments), agri-environmental incentives, and legislation/regulation. Other measures that have been considered by the agencies include advice/training, codes of good practice, extensification schemes and national envelopes, management agreements on protected sites, and taxes/levies. Ideas for possible future mitigation measures have been drawn entirely from consultation with land use policy experts both within the agencies and from external organisations. These contributions were pooled, screened for relevance, and entered into the tables before final comments from agency experts.

3 Environmental impacts and possible mitigation measures

- 3.1 The Common Agricultural Policy (CAP) affects two-thirds of the European Union's land area. The CAP has been by far the biggest influence on agricultural land use in the last 30 years, although it is difficult to assess how land use would have developed in Europe without the influence of the CAP.
- 3.2 The CAP has led to discrete and spatially distinctive forms of change to agricultural land use. These changes can be defined as: specialisation, intensification, marginalisation, and abandonment of farmed land.

Intensification

- 3.2.1 Encouraged by the CAP, many farmers have sought to raise yields through increased use of fertilisers and pesticides and higher stocking densities. The associated changes in the way land is managed have led to a decline in the area of semi-natural habitats, populations of associated wildlife species, and the diversity of landscape features. The amount of available land has been increased through the removal of hedges, walls, farm ponds etc. These changes have allowed easier access for larger machinery which in turn has reduced farm labour requirements and has led to damaging effects on soil structure and functionality.

Specialisation

- 3.2.2 The CAP has encouraged specialisation of particular crops (e.g. cereals, oilseeds and peas/beans) and livestock enterprises (e.g. dairy) as a result of market intervention, particularly high levels of subsidy and quota systems. Such changes have encouraged monocultures with the loss of mixed farming enterprises, and have had impacts on land use, landscape character and biodiversity in these areas.

Marginalisation

- 3.2.3 In areas where land is of poor agricultural quality, traditionally under mixed and low-productivity livestock systems, the low returns from these enterprises have required farmers to seek alternative sources of income or to intensify production methods. These changes have led to the social and economic marginalisation of farming.

Abandonment

- 3.2.4 Parts of Europe with poor infrastructure provision, low economic vitality, declining populations and low agricultural productivity have seen the abandonment of farmed land. These areas are concentrated in southern Member States and France, although in parts of the UK land abandonment has played a part in the switch from farming to forestry.
- 3.3 The desire for CAP reform has been influenced by internal and external developments. These include:

- A need to reduce current CAP prices for commodities so as to meet international agreements under the World Trade Organisation negotiations and to take advantage of world markets.
 - To balance agricultural support between regions and producers so as to reduce abandonment and intensification of agricultural land.
 - The future enlargement of the European Union requires a restructuring of the CAP so as to meet varying demands between Member States, in particular new applicant countries whose economies are still heavily dependent on agriculture.
- 3.4 The 1992 and Agenda 2000 reforms of the CAP have gone some way to address the processes of intensification, specialisation, marginalisation and abandonment. While some of the most direct impacts on the environment have been addressed, the consequences persist and, under the burden of the current CAP, little progress has been made in redressing past damage. For example, it has been estimated that 97% of lowland unimproved grassland, a major ecological resource, was lost between 1930 and 1984 in England and Wales. Much of this loss was driven by artificially high prices for cereals sustained by the CAP's market intervention policies. The 1992 CAP reform and the introduction of the Arable Area Payment Scheme (AAPS) significantly moderated this rate of loss. However, the AAPS has effectively frozen the area of land under arable cropping and presents a major obstacle to reverting some of even the most marginal arable land to grassland through agri-environment schemes.
- 3.5 Despite CAP reforms, imbalances still exist between policies that encourage production and those for nature conservation. For example, extensification premia may still encourage production at levels which are unsuitable for semi-natural habitats and their associated species.
- 3.6 Tables 3.1–3.6 outline the negative environmental effects associated with direct CAP payments, sugar beet cultivation and the dairy regime, including cross-sectoral issues. They also list the measures which have been taken in Great Britain to offset these impacts, and present possible future mitigation measures. The information given in the tables has been collated from CSL (2002) and GFA-RACE (2002) reports and from discussions held with staff from the agencies.
- 3.7 It should be noted that the causes of environmental degradation on farmland are many and varied. It is indisputable that practices such as pesticide and fertiliser application, intensive cultivation and high stocking rates have detrimental effects on the surrounding environment. It is much harder to provide evidence for the underlying causes behind these practices. Direct aid under the CAP is an element of policy which has, intentionally in many respects, changed the patterns of farming systems within the UK. As such, it is at least partly responsible for the negative environmental effects which stem from these changes. However, it is extremely difficult to separate the impact of the CAP from that of other influences on farming practices (e.g. the introduction of new technology) as far as particular environmental effects are concerned. Consequently, this report does not attempt to prove that all the effects listed are solely and demonstrably due to the CAP.
- 3.8 The potential mitigation measures presented in the report are a very brief outline of proposals for changes in policy. Each measure would require detailed further

consideration to assess the possibilities for practical application, including the means by which it might be funded. This report has attempted to present a GB overview of the situation; it has not been possible (except in very broad terms) to take account of the different environmental conditions and political structures in different parts of the country. The issue of funding mechanisms has not been addressed at this stage.

- 3.9 Current and future political and environmental pressures are certain to result in further change to the CAP. This is likely to involve a continuing decline in emphasis on production subsidies and a correspondingly greater emphasis on rural development (i.e. a shift from Pillar I to Pillar II of the CAP). Such changes may also be linked with a decoupling of existing subsidies from production alongside greater compliance with environmental outputs (i.e. greening Pillar I). The measures suggested in this report to mitigate the adverse environmental effects of CAP direct payments can only be a short-term solution to such problems. In the longer term, beginning with the mid-term review of the Agenda 2000 reforms, the inter-agency Land Use Policy Group (LUPG) will press for a more fundamental reform of the CAP. Central to this will be the need to transfer funds from production subsidies to public benefits through the Rural Development Regulation (RDR), together with the decoupling of commodity support from production and its conversion into a basic social and environmental support payment.

Tables 3.1 – 3.6 Environmental impacts from the CAP and possible mitigation measures

Table 3.1 Arable

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
Excessive use of fertilisers (nitrates/ phosphates)	<p>Production subsidies encourage farmers to pursue high outputs on arable land. This requires high applications of NPK fertiliser to maintain nutrient levels. The partial eligibility of forage maize for payments, which requires particularly high levels of fertiliser, has exacerbated these problems.</p> <p>Use of NPK fertiliser to maintain production levels leads to various problems:</p> <ol style="list-style-type: none"> i. Excess nitrates and phosphates in groundwater, either through leaching or particulate run-off into watercourses. This results in eutrophication and a consequent loss of aquatic biodiversity. Nitrates and phosphates can enter watercourses from many different pathways found in the farm environment. ii. Application of fertiliser too close to field boundaries, particularly where these boundaries comprise water features, can result in direct pollution of these areas. iii. Loss of arable weeds as a result of high levels of fertiliser use. iv. A decline in use of organic fertiliser results in a potential loss of soil structure and thus 	<ul style="list-style-type: none"> • Nitrate Vulnerable Zones (NVZs) (but little use for phosphates) • Integrated Catchment Management initiatives in NVZs • General legislation to prevent pollution • Support for conversion to organic farming • Agri-environment schemes 	<ul style="list-style-type: none"> • Improvements to NVZ system (e.g. better monitoring, lower concentration requirements and inclusion of phosphorus) and better enforcement of the 'polluter pays' principle • Targeted agri-environment schemes in vulnerable areas • Nutrient and manure management plans: <ul style="list-style-type: none"> – with support for the production of plans to show farmers potential cost reductions and benefits – self-regulation by farmers to show compliance with plans • Cross-compliance measures to: <ul style="list-style-type: none"> – ensure development of buffer strips between arable and semi-natural habitats – deliver grass field margins and riparian buffer strips to reduce soil erosion/run-off

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
	<p>increased erosion losses.</p> <p>v. Fertilisers may cause chemical damage to buried archaeological artefacts.</p> <p>vi. Encouragement of invasive species at woodland edges, shading out woodland understorey species and inhibiting natural regeneration.</p>		<ul style="list-style-type: none"> • Soil protection plans • Pesticide/fertiliser taxes (or tax breaks for using fewer inputs) with recycling of funds to support environmentally sustainable farming • Tax breaks for those farmers purchasing precision farming equipment • Legislation under Water Framework Directive to control diffuse pollution • Research and knowledge transfer to encourage: <ul style="list-style-type: none"> – precision farming, with support for training and advice (e.g. to show reduced costs to farmers and the environment) and associated costs through RDR – integrated crop/farm management – use of slurry and manure, improving 'prill' quality and use of pneumatic fertiliser spreaders • Research into external costs of water pollution to establish if a reduction in fertiliser/pesticide usage would reduce water purification costs and if these savings could be used to

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
			encourage more extensive/sustainable land management practices
Excessive use of pesticides	<p>Pesticide use is encouraged by CAP direct payments in much the same manner as fertilisers. It is in farmers' interests to minimise weed competition or crop damage so as to increase yields and maximise profitability. The current system in effect penalises organic farming enterprises.</p> <p>Impacts include:</p> <ol style="list-style-type: none"> i. High levels of pesticides reduce the biodiversity of on-farm ecosystems, e.g. arable weed communities and farmland birds. ii. Pesticides may enter/ leach into watercourses through run-off, particularly if adequate buffer strips are not maintained. iii. Pesticides may cause chemical damage to buried archaeological artefacts. iv. Drift into adjacent semi-natural habitats damages plant and animal communities. 	<ul style="list-style-type: none"> • Good practice guidelines (Green Code) • Controls over licensing and registration • Pesticides Regulations • Support for conversion to organic farming • The Voluntary Initiative (Crop Protection Agency) • LERAPS Regulations 	<ul style="list-style-type: none"> • Improved regulation • Ongoing support for organic farming (annual stewardship payment) • Agri-environment schemes, e.g. buffer strips on field/riparian boundaries and between arable and semi-natural habitats which go beyond cross-compliance measures • Soil protection plans • Application of Good Farming Practice (RDP) • Research and knowledge transfer to encourage: <ul style="list-style-type: none"> – precision farming, with support for training and advice (e.g. to show reduced costs to farmers and the environment) and associated costs through RDR – integrated crop/farm management – technology audit as part of a 'crop management plan', e.g. encouraging better sprayer maintenance – fuller compliance with regulation

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
<p>Loss or poor management of hedges and other field boundaries</p>	<p>AAPS does not allow for wide field margins to be included in area calculations. This encourages farmers to either remove them or to cultivate right up to the edge of hedges or other boundary features, failing to leave a sufficient buffer zone between the hedge and cultivated area. This reduces the value of hedges as a habitat for some species, can lead to an increase in herbicide and pesticide usage, and increases diffuse pollution risks as they can provide important run-off breaks.</p> <p>Loss of historic field boundaries has a negative impact on cultural heritage and can materially affect the distinctive character of the landscape.</p> <p>All boundary features are protected when adjacent to set-aside land. At other times certain types of hedge are protected under the Hedgerow Regulations but other boundary features such as ditches and banks are not covered, resulting in even less incentive to manage them properly. These features are often of high archaeological value, enhance the diversity of the landscape, and may help reduce soil loss. Measures to protect field boundaries under set-aside should be extended to cover all cropping.</p> <p>Hedgerow and field trees are also adversely affected by ploughing too close to their roots and are sometimes removed to facilitate machinery operation.</p> <p>Increased mechanisation and reduced labour availability constrains farmers' ability to manage</p>	<ul style="list-style-type: none"> • Set-aside cross-compliance • Hedgerow Regulations • Agri-environment schemes 	<ul style="list-style-type: none"> • Improved cross-compliance measures (e.g. to promote buffer strips along field margins and non-cultivation strips along boundaries, including non-hedge boundaries in set-aside) • Broad and shallow agri-environment schemes for unsprayed margins wider than those delivered through cross-compliance • Whole farm provisions of agri-environment schemes • Advice and training, e.g. on integrated farm/crop management through implementation of RDR measures • Hedgerow Regulations improved to cover greater proportion of hedges and other field boundaries • Assurance schemes and cross-compliance to include best practice towards hedgerows/field margins • Research into external costs of water pollution to establish if a reduction in fertiliser/pesticide usage would reduce water purification costs and if these savings could be used to encourage more extensive/sustainable

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
	hedges appropriately. This is probably a more significant loss of biodiversity than removal.		land management practices
Cultivation damage to landscape features and archaeological deposits	<p>CAP production subsidies provide incentives for maximising yields and thus for intensifying cultivation. Ploughing causes physical abrasion and attrition of earthworks and underlying deposits, and opens up the soil structure allowing frost and water to penetrate, whilst lifting and turning of the soil loosens archaeological material from its context of origin. These processes combine to gradually reduce the quantity and quality of deposits.</p> <p>Set-aside schemes involving a stop-start cycle of tillage can cause more damage than would occur under constant cultivation, due to the increased necessity of deep ploughing to break up accumulated subsoil.</p>	<ul style="list-style-type: none"> • Set-aside • Agri-environment schemes 	<ul style="list-style-type: none"> • Cross-compliance measures linking subsidies to minimal tillage in sensitive areas • Agri-environment schemes encouraging reversion of arable land to grazing where this would benefit landscape or archaeological features • Encourage multi-annual (semi-permanent) set-aside schemes • Patches or rings of grass (buffers but not strips) around solitary trees and other spot features could be very effective
Poor soil management	<p>Poor management practices may lead to soil erosion problems, e.g. more frequent rotations; inappropriate crop types for soil conditions; loss of organic matter due to dependency on inorganic fertiliser; fewer fallow periods. These practices decrease soil stability and encourage the break down of aggregates. This increases the volume of soil lost through runoff. Soil erosion leads to downstream siltation and pollution of watercourses and consequent loss of biodiversity in aquatic ecosystems.</p> <p>Damage to buried archaeological features.</p> <p>Increased use of heavy machinery (e.g. encouraged by</p>	<ul style="list-style-type: none"> • Good practice guidelines • Existing organic schemes 	<ul style="list-style-type: none"> • Advice and training, e.g. on integrated farm/crop management (such as minimum tillage, crop rotation and use of grass buffer strips next to watercourses) through implementation of RDR measures • Legislation to cover diffuse pollution under Water Framework Directive

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
	<p>the amalgamation of farms and loss of field boundaries) causes soil compaction.</p> <p>Increased farming intensity encourages tillage when there are inappropriate soil conditions leading to erosion/compaction.</p>		
Lack of spring-sown crops	<p>The higher yield from winter wheat and barley has led to a decline in the area planted with spring-sown crops on many farms. Many bird species use stubble (especially in fields rich in broadleaved weeds) for feeding in the winter, and spring-sown crops for breeding.</p> <p>Spring-sown crops also generally need lower levels of fertiliser and pesticide use.</p>	<ul style="list-style-type: none"> • Agri-environment schemes • Arable Area Scheme (now under RDR) 	<ul style="list-style-type: none"> • Improved agri-environment schemes e.g. a requirement to grow a set proportion of spring cereals or to retain a specified percentage of stubbles • Enhanced cross-compliance (e.g. seasonal requirements as part of set-aside)
Impacts on land use patterns	<p>AAPS has fossilised the location of arable land. This has led to the maintenance of arable farming on marginal land where it is only viable due to high levels of CAP support. This hinders the re-establishment of grassland, moorland and woodland habitats, and affects the areas where archaeological preservation is often the highest.</p> <p>The ploughing of permanent pasture for planting with crops is outside AAPS rules. For example, this has previously led to the ploughing of SSSIs for planting with flax but this loophole has now been closed.</p>	<ul style="list-style-type: none"> • EIA Regulation • SSSI designation and associated positive management agreements 	<ul style="list-style-type: none"> • Agri-environment schemes to encourage mixed farming in marginal areas (i.e. increase in pasture) so as to re-create original land use patterns • Expand area of land subject to EIA Regulations by defining uncultivated land as areas ineligible for AAPS • Regional and devolved government could play an important role in establishing local identities for areas where diversification and product specialisation is appropriate

Table 3.2 Sugar beet (see also arable)

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
Poor soil management	<p>Many sugar beet crops are planted on sandy soils in exposed areas which are particularly prone to wind erosion. The fields are also bare in spring, which compounds the risk of soil loss. Erosion often leads to pollution problems in water bodies.</p> <p>Harvesting of sugar beet is performed in winter with heavy machinery which compacts the soil and damages its structure. The harvesting process also leads to significant associated loss of soil.</p>		<ul style="list-style-type: none"> • Shelterbelts • Grass strips next to watercourses (as in Holland) mandatory as part of AAPS • Research to establish if management could encourage ground-nesting birds on bare soil • Advice and training to minimise compaction during harvesting and management through implementation of RDR measures
Intensive use of pesticides	<p>Beet requires high applications of herbicide compared to alternative crops because of its slow initial growth rate. Herbicides are often applied in winter when the risk of leaching is greatest.</p>	<ul style="list-style-type: none"> • Good practice guidelines (Green Code) • Pesticides Regulations 	<ul style="list-style-type: none"> • Improved regulation • Legislation under Water Framework Directive to control diffuse pollution
Excessive use of nitrate fertilisers	<p>Beet crops usually follow a cereal crop and an 8-month fallow period which may allow time for the nitrates in the soil to leach out and pollute nearby watercourses.</p>		<ul style="list-style-type: none"> • Ensure green cover is established during fallow period to reduce leaching – could also have benefits for wild birds

Table 3.3 Lowland livestock

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
Overstocking	<p>Headage payments have encouraged farmers to increase stocking densities to levels which damage semi-natural lowland habitats and can cause pollution problems for all habitats. For lowland beef, high-intensity practices are still more profitable than low-intensity even with extensification payments, as other CAP payments encourage overstocking.</p> <p>High stocking densities can have an adverse effect on the flora and fauna of semi-natural habitats, e.g. loss of grazing-sensitive plants and decline in ground-nesting birds. They may also result in increased soil erosion from compaction and insufficient sward cover, pollution of watercourses by increased levels of slurry and other farm waste, and damage to cultural heritage interests. High stocking rates damage hedgerows, due to browsing by stock, leading to loss of hedges and/or replacement by wire fences.</p> <p>Headage payments, for example under the Sheep Annual Premium, limit the flexibility of stocking densities as required by the carrying capacity of each farm.</p>	<ul style="list-style-type: none"> • Cross-compliance • Agri-environment schemes 	<ul style="list-style-type: none"> • Sheep and beef envelopes could be used to achieve sustainable grazing levels and provide payments for extensification below current stocking requirements • Replace headage payments with area payments, in conjunction with cross-compliance measures to encourage appropriate stocking densities • Under cross-compliance farmers could be required to maintain a specified percentage (e.g. 10%) of the farm in semi-natural habitats (this approach has been adopted in Switzerland) • Nutrient management plans • Soil protection plans • Improved risk assessment and implementation of the existing livestock cross-compliance measures: <ul style="list-style-type: none"> – the risk assessment process (and hence any inspection) needs to be targeted at farms and habitat types most likely to be overgrazed – the current stocking rate triggers in

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
			<p>England and Wales are different for no obvious reason</p> <ul style="list-style-type: none"> - other habitats such as woodland should also be included in the assessment • Positive management of woodland to which livestock have access (they do not need to be totally excluded)
Understocking	Loss of livestock farming from areas where arable has been more profitable. In some regions this has led to a reduction in certain habitat types and associated wildlife and landscape features.	<ul style="list-style-type: none"> • Organic Farming Scheme • Agri-environment schemes 	<ul style="list-style-type: none"> • Encourage mixed farming enterprises (will require advice and training for farmers) • Use sheep and beef envelopes to achieve sustainable grazing levels in areas where this is important for habitat management
Intensive grassland management	<p>Intensive grassland management (e.g. associated with beef farming) results in significant biodiversity losses:</p> <ul style="list-style-type: none"> i. Fertiliser and silage application risks increasing nitrate and phosphorus concentrations to potentially damaging levels and may damage the habitat of ground-nesting birds and some flora. Nitrate and phosphorus levels may also be raised in adjacent watercourses. CAP payment regulations do not currently reflect the importance of maintaining buffer zones adjacent to watercourses to minimise the damaging effect of run-off from intensively 	<ul style="list-style-type: none"> • Codes of good practice • NVZs • Agri-environment schemes • SSAFO Regulations • EIA on agricultural land 	<ul style="list-style-type: none"> • Enhancement of agri-environment schemes • Area payments for land used for low-intensity hay production • Focus on stock quality rather than numbers • With support from regional and devolved government, develop mechanisms (e.g. through co-operatives such as French CTEs and assurance schemes) which enable higher premiums to be paid for

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
	<p>grazed grassland.</p> <p>ii. Drainage will directly affect wetland habitats, leading to the loss of typical species and waterlogged deposits containing organic archaeological remains.</p> <p>iii. Ploughing and reseeding of species-rich grasslands leads to decreased plant diversity, and may cause soil erosion problems. It may also damage archaeological interests.</p> <p>iv. Management for silage rather than hay involves earlier and more frequent cutting and increased fertiliser and pesticide usage. This reduces the diversity of the sward and inhibits ground-nesting birds from breeding.</p> <p>v. Loss of mixed farming systems and associated arable weed and bird populations.</p> <p>The current payment structure outweighs the attraction of agri-environment schemes for many farmers and thus undermines efforts to redress the balance towards semi-natural grassland and reduce stocking rates. The retention of the Sheep Annual Premium Scheme contributes to this.</p> <p>Improved grassland around unimproved habitats such as wetlands and woodlands reduces the food available for birds and invertebrates, in particular those requiring mixed habitats.</p>		<p>extensive and/or grass-produced beef</p> <ul style="list-style-type: none"> • Nutrient management plans • Cross-compliance measures to encourage buffer strips around wildlife habitats which are left unimproved or are managed less intensively • Advice and training on grassland management through implementation of RDR measures • Use sheep/beef envelopes to encourage re-introduction of arable cropping in sites where this would be environmentally beneficial • Better understanding required of productivity levels each land class or habitat type can support
Loss or poor	In conjunction with arable payments, the structure of	• See arable	• See arable

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
management of hedges or other field boundaries	<p>the CAP tends to favour farms with one major production objective, rather than mixed arable and livestock. This reduces the practical need for field boundaries with consequent implications for biodiversity, landscape character and cultural heritage (as noted above under arable).</p> <p>Also affects potential for woodland expansion/creation on lowland farms.</p>		
Veterinary medicines (e.g. anthelmintics)	<p>Intensive livestock farming in the lowlands relies on a wide range of pesticides to mitigate the health risks to the animals of increased contact with each other and with waste products. Sheep dips are particularly potent pollutants if they leach into watercourses. Anthelmintics can also adversely affect the beetles, flies and fungi that live on and in dung pats. This is particularly relevant to efforts to restore wood-pasture and low-intensity grassland habitats.</p>	<ul style="list-style-type: none"> • Training and advice • Groundwater Regulations 	<ul style="list-style-type: none"> • Further research needed • Encourage organic and integrated farm management • Advice and training on management through implementation of RDR measures
Loss of rare breeds (and associated impacts on biodiversity)	<p>It is difficult to establish a direct link between the CAP and the losses of rare breeds but CAP payments have encouraged the use of heavier, less specialised breeds. The UK is particularly rich in populations of regional, minority and rare breeds of sheep and cattle. CAP payments do not reflect the biodiversity importance of these native breeds. The risk of losing them was recently emphasised by the Foot and Mouth crisis. Many native breeds have developed strong associations with particular grazing environments and are intrinsic to the maintenance of habitats in these</p>	<p>The UK did not adopt the rare breed component of agri-environment schemes</p>	<ul style="list-style-type: none"> • RDR provisions, including direct support for rare or locally adapted breeds and support for processing and marketing of meat, milk and fibre • May need to revise EU list of rare breeds – not all the UK breeds we would wish to support are sufficiently rare to qualify but have important grazing attributes making them important for conservation

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
	<p>areas. The use of more productive breeds has led to the intensification of grazing as they are unable to thrive on rough vegetation. This can lead to a loss of semi-natural habitats and a decline in associated biodiversity. The use of improved breeds in unsuitable, extreme environments also has implications for animal welfare.</p> <p>This is particularly relevant to efforts to restore wood-pasture, as improved breeds of sheep and cattle are not suitably adapted to grazing in such environments.</p>		<ul style="list-style-type: none"> • Encourage collective schemes for husbandry of rare breeds, with higher rates of grants, to encourage spreading of risk • Sheep national envelope could support the use of traditional breeds

Table 3.4 Upland livestock

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
Overgrazing	<p>As described above, headage payments encourage overstocking. High stocking densities on upland habitats cause changes in the species composition and structure of semi-natural habitats, e.g. conversion of heather moorland to grassland, with associated impacts on birds and other animals. High grazing levels may also result in soil compaction, which can lead to changed hydrology and possibly erosion (e.g. on peat soils and steep slopes), and trampling and scarring of archaeological features.</p> <p>Woodland is often used in the calculation of forage area for LFA payments. In some cases the woodland may not actually be used for grazing but may help in decreasing the reported stocking density for purposes of the extensification premium. Where woodland is grazed it is often difficult to gauge the impact on the local ecology, but high stocking levels may prevent woodland regeneration (some light/seasonal grazing at levels consistent with maintaining woodland interests is beneficial in certain areas).</p> <p>Some low-intensity and/or small-scale farmers, who manage a significant proportion of upland farms, cannot access funds from second pillar funding as they are unable to provide or obtain the co-funding component for projects.</p> <p>The switch from headage to area payments has shifted</p>	<ul style="list-style-type: none"> • Cross-compliance • Agri-environment schemes • Codes of good practice 	<ul style="list-style-type: none"> • Existing cross-compliance and agri-environment schemes need improving, e.g. implement 'overgrazing rules' in woodland to which stock have access • Extensification measures (e.g. sheep national envelope) especially where used to reduce stocking levels or deliver off-wintering; there may need to be high, medium and low bands to encourage different levels of extensification • Payments to promote better shepherding so as to discourage overgrazing on accessible land and under-grazing in outlying areas • LFAs are traditionally associated with low-productivity/extensive systems - in these areas farmers should be rewarded for producing high-biodiversity goods rather being paid for the hardships associated with LFAs • Reduce LFA payment levels above a certain farm size to counteract the inherent discrimination against

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
	<p>the emphasis from the number of animals to the area of land held. Though there is as yet no evidence to confirm the conjecture, this may result in new areas of land being grazed at higher/unsustainable levels. For example, farmers who traditionally rented low-quality land for a small number of animals can no longer afford rents, as rents for grazing land have increased (there is a rise in demand for the land and simple economics apply). Additionally farmers might claim new areas are being grazed but continue to stock at the same (high) levels on the original land area used.</p> <p>In some parts of the UK, the problem is not excessive numbers of livestock - it is more often a question of inadequate stock management (e.g. poor shepherding) leading to overgrazing on accessible ground, with other outlying ground being under-used.</p>		<p>smaller and/or low productivity farms and enable them to remain in business</p> <ul style="list-style-type: none"> • Base LFA land classification more strongly on environmental conditions and integrate with agri-environment measures • Stop inclusion of woodland in calculation of forage hectareage within LFAs to prevent overgrazing in woodland and at the same time change forestry grant rules to allow for controlled grazing • Undertake research to develop better understanding of appropriate grazing levels for different areas
Loss of cattle and mixed farming	<p>The relocation of cattle to the lowlands, as a consequence of CAP payments favouring specific types of farming in particular areas, has led to a decline in the quality of some upland grazing areas (e.g. in parts of Wales and Scotland). In the absence of grazing cattle, bracken and coarse grasses have become more prevalent, leading to the loss of semi-natural habitats and a decline in biodiversity.</p> <p>The artificial 'ringfencing' of quota in designated areas reinforces the spatial separation of different farm types resulting in localised environmental damage.</p>	<ul style="list-style-type: none"> • Agri-environment schemes • LFA support (in Wales) 	<ul style="list-style-type: none"> • Improved agri-environment schemes • Beef envelope • Sheepmeat envelope • In areas threatened by marginalisation or abandonment, measures could be introduced to allow significant land changes, e.g. switching from farmed to naturally regenerated land cover – requires very careful targeting but could provide significant wildlife benefits

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
			<ul style="list-style-type: none"> • Base LFA land classification more strongly on environmental conditions and integrate with agri-environment measures • Encourage light grazing by cattle in woods
Lack of opportunities for woodland expansion and management	<p>CAP livestock payments act as a disincentive for the establishment of woodland in upland areas where forestry would deliver appropriate public benefits and may deliver some benefits to the local economy. The issue of land use fossilisation outlined above (under arable) also applies, i.e. this situation will persist in the face of changing market situations.</p> <p>Where woodland creation is undertaken, the current system of grants fails to discourage the planting of conifers for production purposes which, without grant aid, would not be economic. A patchwork of low-density broadleaved woodland and pasture would reflect the historic pattern of land use and habitats, and increase levels of biodiversity in the uplands.</p>	<ul style="list-style-type: none"> • Woodland Grant Scheme • Farm Woodland Premium Scheme • LFA support in Wales 	<ul style="list-style-type: none"> • Reassess existing schemes to further encourage planting of broadleaved trees over conifers, and thus ensure the delivery of environmental and social benefits from woodland creation • Implement measures from RDR supporting woodland creation • Cross-compliance on Swiss model of a certain percentage of farm in semi-natural habitats • Introduce a processing and marketing scheme/co-operative for forestry products • Make stronger links with LFA measures
Loss of rare breeds	As with lowland livestock.	<ul style="list-style-type: none"> • Agri-environment schemes 	<ul style="list-style-type: none"> • Beef envelope • Sheep envelope • As lowland livestock

Table 3.5 Dairy

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
Intensive grassland management	CAP does not currently support the dairy sector through direct payments (proposal for an effective dairy headage payment 'virtual cows' from 2004) - but the trend towards farm specialisation, accelerated by the CAP regimes, has affected dairy farming as well as the directly supported sectors. Dairy farms require more intensive grassland management than other types of livestock enterprise. Management practices such as ploughing and reseeding, drainage, fertiliser application and heavy grazing all have negative impacts on biodiversity, and may also damage archaeological features (see further comments under lowland livestock).	<ul style="list-style-type: none"> • Pollution control regulations (e.g. SSAFO Regulations) 	<ul style="list-style-type: none"> • Grassland management payment as an alternative to proposed dairy headage payment • Diffuse pollution control as required by Water Framework Directive • Nutrient management plans, with sufficient support for advisory services • Waste management plans • Introduce a requirement to maintain a percentage of land as semi-natural habitat (cf Swiss system)
Poor manure management practices	Manure and slurry from intensive dairy farms is particularly high in combined nitrogen, and also contains significant levels of phosphorus. Nutrient leaching and run-off leads to contamination of groundwaters and eutrophication of surface waters.	<ul style="list-style-type: none"> • SSAFO Regulations • Pollution control regulations 	<ul style="list-style-type: none"> • Diffuse pollution control as required by Water Framework Directive • Nutrient management plans • Waste management plans • Advice and training on management through implementation of RDR measures
Forage maize	Increasing use of forage maize on dairy farms involves problems with intensive fertiliser and herbicide application, soil erosion, and excessive manure applications.		<ul style="list-style-type: none"> • Need to develop an approach which would enable low-intensity and/or small dairy farms to remain in business without being outcompeted by farms dependant on forage maize

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
			<ul style="list-style-type: none"> • Organic Farming Scheme • Integrated farm management leading to assurance schemes and higher value products • Need for advice and education on environmental implications of intensive dairying
Amalgamation of farm units	Small farm units are under pressure as a result of the quota system. Selling quota can be more profitable for small dairy farmers than continuing in business. The problems of amalgamation are similar to other sectors: loss of field boundaries, reduced landscape diversity and consequent reductions in biodiversity.	<ul style="list-style-type: none"> • Beef Special Premium (BSP) and Suckler Cow Premium (SCP) 	<ul style="list-style-type: none"> • Business advice targeted to sustainable land management and profitability, e.g. on-farm processing, marketing on environmental/welfare grounds • BSP and SCP not available to small farmers – the schemes need to be assessed
Loss of traditional breeds	The focus on productivity has led to increasing use of a small number of cattle breeds, and the loss of traditional regional breeds (see further comments under lowland livestock).		<ul style="list-style-type: none"> • As lowland livestock

Table 3.6 Cross-sectoral issues

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
Loss of mixed farming systems	CAP payments have led to increased specialisation of farming systems in different geographical areas (e.g. arable in the east, livestock in the west), and have distorted patterns of land use on the landscape scale. The inflexibility of CAP payments and their consequent inability to reflect real land use market prices has resulted in a situation where there is little incentive for farmers to change from one land use to another and a decline in mixed farming systems. This results in a net loss of biodiversity through loss of habitats, and reduced countryside character and cultural heritage. The loss of regional distinctiveness also has a detrimental effect on tourism.	<ul style="list-style-type: none"> • LFA support (environmental enhancements) • Organic farming schemes • Agri-environment schemes 	<ul style="list-style-type: none"> • Cross-compliance under AAPS (grow set percentage of spring cereals and keep small percentage of stubbles or semi-natural habitats) • Use sheep and beef envelopes to encourage mixed stocking regimes • A whole farm scheme encouraging cereals (in grassland areas) and grassland (in cereal areas) could be used to encourage mixed farming systems • Allow organic farms to use set-aside for livestock • Research to document how landscape has changed in the past century and how biodiversity can be restored to areas which have undergone significant change • Regionally-based financial incentive schemes, with public and private funding, to encourage traditional land use patterns
Loss of traditional farm buildings	The amalgamation of farms and increasing mechanisation have led to the loss of many traditional farm buildings, as these no longer have a place in	<ul style="list-style-type: none"> • Habitats Regulations (protect some species e.g. bats) 	<ul style="list-style-type: none"> • RDR measures to maintain traditional buildings and offer diversification opportunities

Negative environmental effects	Comments	Some existing mitigation measures	Examples of potential mitigation measures
	<p>current farming systems. The level of aid offered through agri-environment schemes for retention and repair of such structures is low and inaccessible to farmers with limited capital.</p> <p>The loss of traditional buildings has contributed to the decline of internationally important species such as bats and barn owls, and to reduced landscape and cultural heritage.</p> <p>Modern buildings and hygiene standards required under assurance schemes may reduce habitats that would otherwise be available in traditional buildings.</p>	<ul style="list-style-type: none"> • Agri-environment schemes • Farm Enterprise Grant (Wales) • National Parks 	<ul style="list-style-type: none"> • Raise grant aid rate for repair of farm buildings • Allow stand-alone agri-environment schemes to cover farm buildings
Loss of other habitats	Intensification has encouraged the removal and/or neglect of farm habitats such as ponds. This can have important consequences for amphibians, plants and invertebrates.	<ul style="list-style-type: none"> • Agri-environment schemes 	<ul style="list-style-type: none"> • Provide payments under agri-environment schemes which would encourage appropriate management/restoration of ponds

4 Summary of mechanisms for mitigating environmental impacts

- 4.1 The range of policy measures available to mitigate the environmental impacts of CAP production subsidies can be conceived as a tiered approach towards delivering environmental public goods and services. The bottom tier of this policy 'pyramid' comprises basic environmental standards which should be met by land managers, including compliance with regulations and codes of good practice, and application of cross-compliance to support payments. Above this, there are wide-scale incentive measures designed to deliver environmental objectives, such as 'broad and shallow' agri-environment schemes and LFA support. The top tier of the pyramid comprises targeted schemes and agreements to deliver specific benefits in areas of high environmental value, such as 'narrow and deep' agri-environment schemes and management agreements on statutory sites.
- 4.2 Fundamental to all the proposed policy measures is the concept that the environmental benefits produced and maintained by farmers and other land managers can be paid for by society. This will require careful analysis of what different areas have to offer in the form of existing or potential 'environmental goods' (such as wildlife habitats). There may be advantages in developing a regional approach to environmental standards and public benefits, e.g. priorities and targets could be set at a local level, in consultation with farmers' representatives to ensure maximum uptake of schemes by the local rural community. This type of initiative would have to be taken forward by devolved Governments and Regional Development Agencies to ensure local/regional requirements are met.
- 4.3 Tables 3.1-3.6 contain a wide range of potential environmental mitigation measures. This section summarises this information on a cross-sectoral basis, and places it in the context of the policy pyramid model.

Regulation and legislation

- 4.4 Care must be taken not to unnecessarily increase the regulatory burden on farmers. However, there are a few areas where enhanced regulations might deliver significant environmental benefits:
- Improvements to Hedgerows Regulations to cover a greater proportion of hedgerows and other field boundaries
 - Improvements to existing regulations covering pesticides
 - Expand the area of land subject to the Environmental Impact Assessment Regulation by defining 'uncultivated land' as all land currently ineligible for AAPS.
- 4.5 The Water Framework Directive will require the development of mechanisms to ensure that diffuse pollution (e.g. from agricultural sources) does not adversely affect water quality (see also cross-compliance measures).
- 4.6 To improve control of nutrients, more stringent limits with lower application rates and better targeted and more effective monitoring of Nitrate Vulnerable Zones is required (e.g. following the risk-based approach currently being adopted by the Environment Agency). There would also be benefits in creating a parallel scheme to regulate

phosphates. This could be achieved through the development of nutrient and manure management plans and soil protection plans.

Advice and training

- 4.7 Farmers need better advice on a range of issues, including precision farming, integrated crop/farm management, soil management practices, and how to use and set up co-operatives and machinery rings. Advice and training must be supplied in a way which farmers will use, e.g. based on local requirements through mechanisms which farmers can easily access. Training programmes could be implemented in a more targeted way under Article 9 of the RDR.
- 4.8 Participatory transition to sustainable practices could be encouraged through the provision of grants and extension support to farmers' groups and co-operatives for sharing information and resources on crop protection, soil protection, watershed management etc. These groups and co-operatives could be set up by regional/devolved government. Such groups could play a valuable role in disseminating advice tailored to local conditions, e.g. they could provide advice on how to increase the value of products (such as through high-quality livestock production) and create local distinctiveness (so supporting tourism initiatives). There could also be benefits in encouraging collective training and assurance schemes with higher rates of support (as in CTEs in France).

Cross-compliance measures

- 4.9 There are various options for enhancing existing cross-compliance measures, including:
- Improved implementation of existing cross-compliance measures to prevent overgrazing.
 - Within the AAPS, and also possibly under the other regimes, farmers could be required to manage field margins for environmental purposes, by providing grass margins or uncropped/unsprayed strips adjacent to traditional field boundaries, and riparian buffer strips.
 - Uncultivated strips around semi-natural habitats and field boundaries would be beneficial to a wide range of wildlife.
 - Minimal tillage in areas with sensitive archaeological and landscape features.
 - Farmers could be required to maintain a small proportion of the area under winter stubbles for sowing with spring crops with the aim of enhancing biodiversity on arable land.
 - An increase in the area of semi-natural habitats could yield biodiversity benefits. This approach has been used in Switzerland, where farmers are required to maintain a significant percentage of the farm as semi-natural habitat.

Environmental taxes

- 4.10 Further consideration could be given, in due course, to introducing environmental taxes on pesticides and NPK fertilisers. A large proportion of the revenues derived from such measures should be directed towards a programme of advice and incentives for farmers, e.g. encouraging the uptake of organic alternatives.

Assurance schemes

- 4.11 Assurance schemes should be encouraged to adopt environmental conditions, e.g. no removal of field boundaries without corresponding replacement of an equivalent length of boundary, storage of pesticides in approved manner, compliance with Good Farming Practice.

Less Favoured Area payments

- 4.12 LFAs are traditionally associated with low-productivity and/or extensive systems (although some areas were encouraged to intensify under LFA headage payments, and SAPS headage payments continue to have the same effect). Areas where low-productivity/extensive systems still exist often have high biodiversity value. LFA policy measures need to be adjusted to reflect this situation, i.e. by regarding them as 'high-biodiversity areas' rather than areas of poor agricultural quality. To achieve these aims LFA schemes need to be revised so they pay for the environmental goods delivered. Such a scheme would require clear environmental conditions to be attached to farming practices and to be fully integrated with agri-environment measures.
- 4.13 The LFA payments could be structured to discourage unimproved areas being converted to semi-improved whilst at the same time promoting the return of improved areas to lower fertility levels. This would require an assessment of the stocking levels or cropping types which are associated with high biodiversity in these areas, and the provision of advice/training to farmers on how changes to stocking levels could increase biodiversity and what environmental goods are being sought from them. Under such schemes, payments would also be linked to the area of semi-natural habitats or less intensively managed land found on each farm. This would reward farmers for producing specified biodiversity/landscape features and truly decouple support from production.
- 4.14 LFA payments and upland agri-environment schemes should be properly integrated to achieve the objective of sustainable land management in the uplands. This should be addressed by reviewing agri-environment schemes and LFA schemes as part of the mid-term evaluation of Rural Development Plans.
- 4.15 The switch from headage to area payments has shifted the emphasis from the number of animals to the area of land held. This has increased the rentable value of low-quality land and could lead to increased stocking levels above what the land can sustainably support.
- 4.16 Woodland should not be included in the calculation of forage hectareage within LFAs to prevent overgrazing in woodland. There should however be a forestry grant for low-intensity grazing of woodland where this is appropriate.

Livestock envelopes

- 4.17 Livestock envelopes could be used to achieve sustainable grazing levels, e.g. by paying for extensification below current stocking requirements. Extensification payments could be linked to the management required under Biodiversity Action

Plans. The sheep and beef envelopes could also be used to encourage mixed stocking regimes, and the growing of cereals in predominantly livestock areas to diversify land use and cover patterns.

Agri-environment schemes

- 4.18 Above the baseline set by legislation, cross-compliance and codes of good practice, 'broad and shallow' agri-environment schemes should be available to most farmers and land managers. Payments would be made in return for following a basic set of management prescriptions aimed at delivering wide-scale environmental objectives. 'Broad and shallow' schemes could be integrated with targeted 'narrow and deep' schemes in which more demanding management regimes help to protect and enhance vulnerable areas and deliver key environmental targets. All schemes should be based on whole farm plans to ensure monies received for environmental purposes do not lead to intensification elsewhere on the farm.
- 4.19 In some circumstances, farmers are unable to access funds for the restoration of farm buildings under existing agri-environment schemes. A 'stand-alone' scheme could be developed to cover the additional costs of restoration of traditional farm buildings, where the alternative might be erecting a new structure.
- 4.20 Links between agri-environment schemes and the UK Biodiversity Action Plan should be strengthened to encourage the delivery of both national and local Habitat and Species Action Plans, whilst continuing to deliver landscape, access, cultural and historical objectives.

Woodland schemes

- 4.21 Existing schemes (e.g. the Woodland Grant Scheme) should be reassessed with the aim of further encouraging the planting of broadleaved trees rather than conifers.

Other RDR measures

- 4.22 A variety of mechanisms could be implemented under the RDR to provide environmental benefits, e.g. to encourage mixed farming, develop added value products and alternative enterprises. These could include:
 - Develop better targeted training programmes through Article 9 of the RDR, with the objective of improving sustainable land management techniques.
 - Encourage collective schemes/co-operatives along the lines of CTEs (Land Management Contracts) in France, e.g. by providing higher levels of grants. It will be important to reduce bureaucracy associated with the establishment and administration of collective schemes as this might otherwise provide a disincentive for collaboration. There could be a role in this process for both local and regional government, e.g. creating local distinctiveness and encouraging tourism.
 - Encourage the production of higher quality livestock products through the use of traditional breeds and extensive production systems. Farmers would require advice on marketing and production, perhaps through producer groups/co-operatives.

- Implement measures within the RDR (Articles 30 and 32) for the creation and management of woodlands, the marketing and processing of forest products, and creation of forest industry associations.
- Implement Article 4 of RDR – investment in agricultural holdings to support capital investment and raise standards beyond the legal minimum (as in Welsh RDP).
- Offer RDR measures to maintain traditional buildings and other diversification opportunities.

Research

4.23 The development of enhanced mitigation measures would be facilitated by further research into certain areas which could include:

- appropriate grazing levels for different habitat types and areas so as to feed into agri-environment prescriptions, livestock extensification schemes, etc.;
- the costs of removing pesticides and fertilisers from water. This may show it is cheaper to encourage farmers to reduce inputs rather than remove pollutants from water;
- mitigation measures for anthelmintic pesticides;
- historical changes in land use patterns.