

THE STATE OF SCOTLAND'S FARMED ENVIRONMENT 2005

SUMMARY

The review of the state of Scotland's farmed environment 2005 has identified a number of different key issues with respect to a wide range of different topics assessed in the briefing notes in section 2 and section 3. In addition, section 4 compared the different existing policy commitments in relation to the Scottish farmed environment and provided an outlook on forthcoming main policy issues. The main issue(s) and gaps identified in the different briefing notes in sections 2 and 3 and section 4 are summarized in the following table and compared with the main findings of previous assessments of the state of the farmed environment in 1991 and 1999 (as reported in section 1 of this report).

RESOURCE	KEY ISSUES
Section 1	INTRODUCTION AND OVERVIEW
1991 STATE OF THE SCOTTISH ENVIRONMENT REPORT	Dargie and Briggs (1991) concluded that there were signs " <i>that a watershed has been reached in terms of the significance of environmental policy</i> ", however restructuring of the NCC and Clause 12 of the Natural Heritage (Scotland) Act 1991, allowing retrospective challenges against SSSI designations, gave cause for concern. The indirect effects of non-environmental policy were also of concern, particularly reform of the Common Agricultural Policy. They observed that: " <i>the potential impacts of policy change on the Scottish environment are far from clear, demonstrating the need to integrate environmental considerations into other policy areas</i> " (p.73).
1999 SCOTTISH ENVIRONMENT AUDITS 2: AGRICULTURE & THE ENVIRONMENT	Egdell (1999) observed that further reforms to agricultural policy are currently being discussed by the European Council of Ministers, driven by the desire to extend the European Union eastwards, to reach agreement on agricultural trade in the next round of negotiations of the World Trade Organisation, and to keep the Commission's budget within agreed limits. The Agenda 2000 proposals suggest that the environment should become much more central to agricultural policy, though still secondary to farm income objectives.
Section 2	CONTEMPORARY ISSUES
HABITATS AND SPECIES	Under the UKBAP, Action Plans are developed to protect biodiversity. Originally, work concentrated on protecting small areas of vulnerable habitats and the species that they supported (SSSIs); this has since been extended to improved management agreements on farms within wider areas of natural heritage value. 13% of Scotland's land area is designated as SSSIs. The most significant change in habitat in the 1990s was the decline of semi-natural habitats by 88,900 ha, while on the other hand intensive agriculture increased by nearly 37,000 ha. By 2002, from 173 BAP species and 31 BAP habitats considered, 29% of the habitats and 18% of the species were in decline. To prevent the impact of potentially damaging land management operations on SSSIs, prescription-based agreements were established by the Government on farms within defined areas of natural heritage value (ESAs). The GCT's research into the decline of red grouse and grey partridge led to solutions that had wider-ranging benefits for wildlife on farmland. Management options like wildflower strips in field margins and beetle banks have been included in the RSS. Policy changes like the introduction of NVZ rules and the SFP are likely to lead to less intensive farming methods and more beneficial conditions for habitats and species.
LANDSCAPE	Landscape encompasses the physical foundations, natural land cover, and cultural influences. Scotland's landscape has been shaped by six thousand years of farming. Whereas the uplands are viewed as predominantly natural, the character of the

	<p>lowlands shows the suitability of the land for a variety of agricultural systems. Farmers are increasingly expected to act as stewards of natural resources by maintaining landscape, wildlife and biodiversity. Future trends indicate continued restructuring and intensification in the east, and possible extensification of hill and upland systems in the west and north.</p>
ACCESS	<p>The Land Reform (Scotland) Act 2003 establishes statutory rights of non-motorised access to most areas. The Scottish Outdoor Access Code provides practical advice on interpretation of responsible behaviour associated with access rights. Local authorities have a duty to draw up a core path plan within 3 years. The core path plan will have regard to the likely usage and desirability of paths, and a balance with landowner interests.</p>
CULTURAL HERITAGE	<p>Scotland has more than 250,000 known archaeological sites. 7,800 of these are SAMs and therefore protected under the Ancient Monuments and Archaeological Areas Act (1979). Management and protection of cultural heritage sites is under supervision from HS, SNH, SEERAD and the Forestry Commission with support from the CSA. The Ancient Monuments and Archaeological Areas Act (1979) protects sites through primary legislation, and there are restrictions on development through the national planning policy guidelines. Funding to support this work is available, for example, through agri-environment and woodland schemes. In 2004, 478 archaeological sites were managed under the Rural Stewardship Scheme.</p>
FRESHWATER	<p>Agricultural demand for water abstraction for irrigation purposes will continue to increase, causing localised problems with low flow rates and water table lowering. This could be exacerbated by changes in rainfall regimes. Measures to control abstraction have now been extended throughout Scotland via the provisions of the Water Environment (Controlled Activities) (Scotland) Regulations 2005 (CAR).</p> <p>There is very little information available on the current extent or condition of agriculture-related artificial drainage systems in Scotland. Lack of grant support, high labour costs and low profitability may mean that many land managers are failing to maintain drainage systems. This could be having variable environmental effects and some monitoring should take place.</p> <p>There has been a significant reduction since 2000 in the number of reported point-source pollution incidents involving agricultural sources. There remain, however, concerns about agriculture-related diffuse pollution. Nitrogen fertilizer is generally applied to crops as a combination of nitrate and ammonium compounds. Whilst ammonium ions are adsorbed onto soil particles, nitrate ions are highly mobile in soils and can be easily leached to ground or surface waters. Moreover, shallow groundwater sources are especially at risk of contamination by faecal coliforms from livestock waste material. However, progress is being made with regard to bathing water quality. In 2005 95% of the bathing waters met European standards, and for the first time ever all recognized bathing waters on the west coast met the required standards.</p> <p>Agricultural practices have a role in regulating run-off particularly through increased storm water storage. This can reduce downstream flooding risk. Because a significant area of prime agricultural in Scotland is itself at risk, reducing accelerated run-off through changed cultivation techniques and riparian zone management, may have agricultural and environmental benefits as well as reducing flood risk. In a similar way to control of agricultural pollution, this points to the benefits of a catchment-based approach.</p>
FORESTRY AND FARM WOODLAND	<p>17% of Scotland's total land area is woodland in 2005. In 2004, 79% of all forest land in Scotland was conifers, 21% broadleaved species. The many small sites of ancient and long-established woodland areas are an important part of Scotland's natural and cultural heritage. About a third of Scotland's forests are managed by the Forestry Commission. In 2004, the Forestry Commission carried out 90ha of new planting, 34% of which was broadleaved species; non-Forestry Commission owners carried out 6,703ha new planted with 62% broadleaves.</p> <p>The overarching principle for the Scottish Forestry Strategy is sustainability; the</p>

	<p>other principles are integration, positive value, community support, diversity and local distinctiveness. The Scottish Forestry Strategy is currently under review.</p>
<p>SCOTTISH AGRICULTURE AND CLIMATE CHANGE</p>	<p>Scotland's contribution to the UK's domestic target for reductions in GHG emissions is currently inadequate. Scottish agriculture, land use change and forestry currently make disproportionately large contributions to UK Greenhouse Gas Emissions. 28% of Scottish emissions are estimated to result from agriculture, land-use change and forestry.</p> <p>The greatest potential for mitigating future GHG emissions from UK soils lies with Scottish agriculture and forestry. Policy for these areas is wholly devolved. There are opportunities to integrate climate change mitigation within agricultural policy. However, the ERDC noted that little thought appears to have been given to integrating climate considerations into potentially useful policy mechanisms, such as land management contracts. The ERDC further identified the need to examine the contribution that various strands of land-related policy make to greenhouse gas emissions so that it will be possible to develop feasible and acceptable sectoral targets for reducing land use emissions.</p>
<p>SOILS</p>	<p>There is a dominance of acidic, organic matter rich soils in the west and more mineral, less acidic soils in the east. Scotland has over one million hectares of blanket bog, approximately 10% of the world's coverage.</p> <p>Erosion is the most common type of soil physical damage in Scotland, caused e.g. by overgrazing, inappropriate cultivation of steep slopes, and the extension of footpath networks in popular areas. The most severely eroded areas are found in the eastern Southern Uplands and eastern Grampians along with evidence of land management pressure such as grazing and burning.</p> <p>No single piece of Scottish legislation addresses the management and protection of soils alone. However, the quality of soil is directly and indirectly addressed by a wide variety of environmental guidelines and regulations.</p>
<p>DEVELOPMENT DIVERSIFICATION AND LAND USE CHANGE INCLUDING ENERGY CROPS</p>	<p>The changing focus of agricultural support and the requirements of GAEC suggest that further significant losses of landscape structure in arable settings are unlikely over the next decade. Moreover, it is likely that this process of reversion in improved grasslands will continue over the next decade as marginal grasslands become less financially viable to maintain (i.e. drain maintenance, liming and fertilizer cost). It is also likely that previous trends for increased stocking rates on upland and hill habitats will be reversed. The critical factor in relation to habitat recovery or change in the uplands will be the relative balance of domestic and wild herbivores.</p> <p>Horsiculture has become a regional important land use. Data from the SEERAD JAC indicate that between 1983 and 1999 there was a 145% increase in horse numbers in the former Grampian Region. By underestimating the increase in horse numbers particularly in the travel to work areas of the major urban centres there is a failure to capture a major contemporary land use change and particularly its economic and environmental impacts. No research has been carried out on these impacts.</p> <p>It is likely that the production of biomass fuels will become locally important over the next decade, however in Scotland the main potential is thought to be associated with wood residues rather than energy crops.</p>
<p>LAND TENURE AND LAND OWNERSHIP</p>	<p>Most sporting estates are run at substantial annual losses, and can be considered as luxuries rather than businesses, often representing only a small part of their owners' total assets. Consequently, finances may only be one of several factors in driving management decisions. This can potentially be a significant limitation to the effectiveness of fiscal or monetary incentives designed to direct land use patterns.</p> <p>The historical legacy of feudal tenure is that Scotland now has one of the most highly concentrated patterns of private land ownership in the world. Information for estates sold in 2004 indicates that some 81% of buyers were from the UK, 12% from mainland Europe and the remaining 7% from elsewhere. Today only around 12% (c.1.3M ha) of Scotland is owned by public bodies.</p> <p>The purchase of the Mar Lodge estate in 1995 elevated the National Trust for Scotland to the third largest landowner in Scotland. Community ownership has seen</p>

	<p>a rise since the purchase of North Lochinver Estate by the Assynt Crofters in 1992, and is now supported by HIE's Community Land Unit and the Scottish Land Fund.</p>
GM	<p>Three-year farm scale evaluations found that conventional fields showed greater numbers of broad-leaved, flowering weeds and consequently more butterflies and bees. Seed numbers from grass weeds were higher in the GM crops. However, there were differences between winter and spring sown oil seed rape, as well as seasonally.</p> <p>While during a UK-wide public debate on GM in summer 2003 it became evident that the general public was uneasy about the introduction of GM crops and food, a science review, carried out at the same time, also concluded that the main risk from GM crops is the potential effect on biodiversity.</p> <p>However, under European legislation a total ban of GM crops is not possible, but the longer-term potential of GM technology is not being dismissed. The Executive works towards establishing statutory co-existence measures (also addressing the problem of losses through contamination of non-GM crops with GM) and will give guidance to farmers wishing to create voluntary GM-free zones.</p>
SECTION 3	ENVIRONMENTAL OBLIGATIONS AND INCENTIVES
THE WATER FRAMEWORK DIRECTIVE	<p>The WFD covers all water bodies and wetlands dependant on a body of surface water or a body of groundwater in Scotland potentially providing a range of environmental benefits and having significant impact on agricultural activities. The Directive is transposed into Scottish law through the Water Environment and Water Services (WEWS) (Scotland) Act 2003 developed in 2003.</p> <p>Stronger integration with other policy frameworks, in particular CAP, would increase environmental benefits of the WFD. For example, stronger integration of WFD objectives in specific prescription and measures in agri-environment and forestry schemes, together with flood alleviation schemes, could increase environmental benefits through the transformation of agricultural land to wetland, riparian woodlands and floodplains and would also contribute to flood prevention. Axis 2 “improving the environment and countryside through land management” of the new RDR provides a direct link to support EU environmental objectives such as water quality through CAP and rural development.</p>
CROSS COMPLIANCE: STATUTORY MANAGEMENT REQUIREMENTS	<p>The CAP reform agreement, implemented by Council Regulation (EC) No 1782/2003 (OJ L270,21.10.2003), defines standards and requirements, so called Cross Compliance, which farmers have to meet as a condition of receiving their Single Farm Payment. These Cross Compliance requirements and measures concern the promotion of a more environmentally friendly and sustainable approach to farming in Scotland. In principle, Cross Compliance applies to all land within an agricultural business including land which is not used to activate Single Farm Payment entitlements.</p> <p>There are two elements to Cross Compliance: The first element is the compliance with 18 European regulatory requirements covering the environment, food safety, animal and plant health and animal welfare. These Statutory Management Requirements are in force throughout the EU and have to be complied with by land managers with as a condition of receipt of the Single Farm Payment. The second element is the compliance with a requirement to keep land in Good Agricultural and Environmental Condition (GAEC).</p>
GOOD AGRICULTURAL AND ENVIRONMENTAL CONDITIONS	<p>GAEC measures are an important part of Cross Compliance and must be complied by farmers to receive the single farm payment, the main income transfer instrument in tier 1 of LMCs. GAEC is defined by reference to a number of measures and management practices that need to be adhered to covering soil erosion, soil organic matter, soil structure and minimum level of maintenance.</p> <p>It is widely anticipated that decoupling of direct payments and modulation will lead to further land management extensification and to changes in farm structures resulting in less but bigger farms. Without GAEC, extensification, on the one hand, and farm amalgamation, on the other hand, could potentially lead to significant changes in vegetation and field structures (less walls and dykes), with implications for environment, wildlife and the characteristics of</p>

	the cultural landscape in rural Scotland.
THE SCOTTISH BEEF CALF SCHEME	<p>The Scottish Executive decided, while implementing the single farm payment (SFP) fully decoupled, to make use of the option under Council Regulation (EC) 1782/2003 (article 69) to implement the SBCS in 2005 recognising the specific importance of beef cattle. Actual payment rates for eligible calves will depend on the total number of eligible claims in each year. A higher rate will be paid for the first 10 beef-bred calves followed by a lower flat rate for further eligible animals. However, in earlier information provided by SEERAD, the Executive anticipated payment rates of around £70 for the first ten beef bred calves in each business and £35 for all other beef-bred calves. The scheme will be funded through the beef national envelope created by retaining 10 percent of the single farm payment.</p> <p>The SBCS is subject to modulation at the rate defined for certain years. Farmers receiving the SBCS will be required to comply with Statutory Management Requirements and to maintain their land in Good Agricultural and Environmental Condition (GAEC).</p>
LMC MENU SCHEME	<p>A prototype LMC Menu Scheme was introduced for the first time in 2005 and provisional information released by SEERAD indicates that about 10,000 farmers have applied under the various options available in the menu, representing just under half of all farmers applying under the Single Farm Payment Scheme (Tier 1). This will direct £17 million to farm households financed through modulation of the Single Farm Payment Scheme. The biggest interest and highest uptake has been for a quality assurance scheme, participation in an animal health and welfare programme, improving access and protection of linear landscape features such as dykes and hedges. Conversely, low uptakes have been received for measures such as biodiversity cropping on in-bye, off-farm talks and management of moorland grazing.</p> <p>A key element of the LMC Menu Scheme is that there is a free choice as to which measures farmers can apply for. Although consideration was given by SEERAD (in a public consultation) to having some restriction on the choice this has been rejected. The advantage is that such a “free choice menu” approach could potentially allow farmers to incorporate aspects that account for the specific characteristics and structure of their farms. On the other hand, there is a risk that a spatially inconsistent distributed menu of different measures reduces the potential benefit of the scheme.</p>
THE LESS FAVOURED AREA SCHEME	<p>The new LFA Support Scheme (LFASS) has introduced a number of new or strengthened elements, in particular after revisions in 2003 and 2004. The calculation of the area based entitlements depends on eligible forage hectares, livestock units and grazing categories, fragility categories of areas, and an environmental element such as the livestock mix maintained.</p> <p>Expenditure in the SRDP is dominated by LFA support with 58 % of its spending. While the positive income effect for LFA farms is widely recognized, the scheme has been criticized, in particular in the early years, for focusing on the importance of LFA payments to farming incomes, and not on environmental or wider-economy issues. Moreover, the relevant target for the LFASS as set by the Scottish Executive to sustain agricultural activities in Scotland’s remote hills has been subject to criticism as many farm businesses receiving LFASS are not in remote hill areas. There has been no integration with designations such as Sites of Special Scientific Interest (SSSIs) identified by environmental agencies or Environmentally Sensitive Areas (ESAs). However, while environmental aspects are included in the aim of the scheme, it remains a mainly socio-economic support instruments for farming in disadvantaged areas. Decisions on revisions of the European LFA designation and the associated specific support have been postponed until 2010.</p>
ENVIRONMENTALLY SENSITIVE AREA SCHEME AND COUNTRYSIDE PREMIUM	<p>In 2003, £4.9m was paid to 1185 CPS participants Scotland-wide. There were differences in the number of participants in SEERAD sub-regions, ranging from 5 in South Ayrshire to 183 in the region comprising Aberdeen City, Aberdeenshire and NE Moray. However there are no readily available data on the proportions of those areas entered into the scheme.</p> <p>A major factor in determining whether or not a farmer entered the ESA scheme was</p>

<p>SCHEME</p>	<p>how well the scheme and its prescriptions fitted in with the current farm activities and management. When the ESA scheme closed to new applicants in 1999, two-thirds of the potential 4069 eligible holdings had entered the scheme and payments in that year totaled £10.4 million.</p> <p>The ESA concept enabled the targeting of areas where certain habitats and features were considered to be particularly at risk but area targeting of ESAs was perceived as too narrow in the Scottish context and a scheme which procured environmental gain throughout the farmland of Scotland was seen as highly desirable. However the ESA scheme provided a focus for the conservation of some nationally and internationally important sites which are more regionally concentrated (e.g. native pinewoods in Cairngorms Straths, machairs) and mandatory Tier 2 measures focused funding on what were perceived to be the habitats and features most at risk in each ESA.</p> <p>On the other hand, results from monitoring suggest the main problem to be a lack of flexibility of Tier 2 prescriptions to meet local conditions, lack of ecological expertise amongst local SEERAD staff to assess the value of Tier 2 sites and to sanction variations to prescribed management procedures and lack of ownership of the scheme by farmers.</p>
<p>RURAL STEWARDSHIP SCHEME</p>	<p>In 2003, there were 1511 participants in the scheme at a cost of almost £10.5 million, with a relatively high uptake of bird-related and water margin measures. At present, in the scoring system high weighting is given to the diversity of habitats included in the plan, without taking any direct account of environmental quality. Consequently some large farms and estates will be highly competitive because of the diversity of habitats present but makes it difficult for land with a limited range of habitats to enter even if these are of exceptional quality.</p> <p>Lack of transparency is another major criticism of the scoring system. Farmers don't know how many points are required to secure entry into the scheme. IACS businesses already involved in other agri-environment, conservation or woodland schemes are given additional points. The lack of monitoring information makes it difficult to determine the influence of management prescriptions on environmental outcomes as there is no direct evidence available, yet.</p>
<p>ORGANIC AID SCHEME</p>	<p>The total land under organic management in Scotland (fully organic and in conversion) equals 7.3% of the total agricultural area. A large proportion of this is rough grazing (in 2004, about 84%). The introduction of more attractive payments under the OAS in 2004 have, after a drop in numbers of agreements in recent years, increased the interest in joining the scheme.</p> <p>Although there is evidence that organic farming generally is beneficial to biodiversity as well as being more efficient in the use of energy, specific data for Scotland are lacking.</p> <p>The Scottish Executive is committed to advancing organic farming in Scotland and aims at increasing the self-sufficiency rate for products that can be sourced in Scotland to 70% by value. It is being advised by an Organic Stakeholder Group as well as the newly created Organic Stakeholders Marketing Group. There is still a need for better information on environmental impacts of organic farming in Scotland to aid policy direction.</p>
<p>NATURAL CARE SCHEMES</p>	<p>Natural Care was launched in October 2001 as a strategy to manage Sites of Special Scientific Interests (SSSIs) and Natura sites better and to support their owners and managers. Currently there are nine voluntary Management Schemes operated under Natural Care: Mull Eagle Scheme, East Scotland Grasland Management Scheme, Lendalfoot Grasland Scheme, Peatland Management Scheme, Solwy Merse Management Scheme, Corncrake Management Scheme, Local Goose Management Scheme, Moorland Management Scheme and Lowland Bogs in Grampian.</p>
<p>NITRATE VULNERABLE ZONES</p>	<p>About 14% of Scotland is designated as NVZs. In these areas legally binding rules, called Action Programmes, are in place to reduce nitrate loss from agricultural land. Action Programme measures include rules on record keeping, N application limits, periods closed for N application, and storage of manure. An effect of the application of Action Programme rules cannot be shown as yet, as there is a natural time lag between improvements on the farm and in the waterbody.</p>

ENVIRONMENTAL ASSESSMENT	<p>The Environmental Assessment Bill provides that certain authorities and bodies (e.g. local authorities, Scottish Executive) will be required to undertake an SEA for all their plans and programmes unless they have minimal or no likely significant environmental effects. This will include agriculture and forestry strategies.</p> <p>Agricultural operations generally fall outside the scope of the Town and Country Planning System and, where relevant, are regulated under other consent procedures. Agricultural operations currently fall outside the scope of the EIA regulations, unless they involve large developments, water abstraction or forestry-related work. The scope of the new Environmental Assessment (Scotland) Bill will mean that SEA will be a requirement of all future strategies, plans or programmes related to Scottish farming (e.g. Scottish Rural Development Plan).</p>
THE SCOTTISH FORESTRY GRANTS SCHEME	<p>Nearly the entire new planting takes place on non-FC land but the uptake of new planting decreased over the period 2001 – 2005 from 11,600 ha to 5,600 ha. The amount of woodland approved for annual management grant in 2001 was more than twice as large as in 2004. Even more drastic is the decline in woodland approved for grants in 2005. The latest figures show a further decline to only 1,000 ha of woodland approved for stewardship grants, the successor of management grants which were phased out in 2003/2004.</p> <p>Overall, due to limited funding, conflicts with other land uses, e.g. agriculture, and farmers’ perception of tree planting, the uptake of forestry measures and establishment of new forest areas has been restricted and needs to be increased, in particular, if the key aspiration of the Scottish Forestry Strategy (SFS) of 25% woodland cover by 2050 is to be fulfilled.</p>
THE SFGS: FARMLAND PREMIUM (FARM WOODLAND PREMIUM SCHEME)	<p>The number of agreements under the predecessor, the Farm Woodland Premium Scheme, rose steadily during the duration of the scheme from 1992 to 2003 to 2689 agreements and an area of 52,521 ha in 2003. In 2004, £5.15 million was paid to farmers for afforestation of farmland through the FWPS. In addition to the existing commitments in the FWPS, nearly one hundred claims under the new SFGS: Farmland Premium have been made in the scheme year 2004 with an average value of £2,232 per claim (i.e. £0.2 million in total).</p> <p>With respect to environmental impacts, the review of the FWPS carried out in 2002 concluded that despite having landscape, habitat and biodiversity objectives, the FWPS was untargeted in terms of environmental objectives it was aiming to achieve. The review suggest to move more closely towards the functioning of the RSS by linking objectives and targeting priorities to biodiversity aims as expressed through LBAPs and other local strategies.</p> <p>Recognizing the need for improved woodland management, farm woodland planning and farm woodland management measures have been included in the new LMC Menu Scheme. But low uptake of forestry measures by farmers is a common problem, restricting the amount of woodland planted on agricultural land. Hence, farmers’ attitude towards tree planting is a crucial aspect to consider in future forestry planning, if the key aspiration of the Scottish Forestry Strategy of 25% woodland cover by 2050 has to be fulfilled.</p>
NATIONAL PARKS	<p>More than 70 years after National Parks were first proposed for Scotland, Loch Lomond and The Trossachs National Park was established in 2002, and the Cairngorms National Park in 2003. The National Park Plan, which is expected to be finalised in 2006, sets out how the National Parks will be managed to achieve the statutory aims. Foremost of these is the conservation of natural and cultural heritage. Sustainable use and development is pursued as well as the enjoyment of the Parks by the public.</p> <p>More than half of the area of Loch Lomond and Trossachs National Park is used agriculturally, most of which is classified as Severely Disadvantaged. Changes in agricultural policy bear the danger of abandonment of grazing in some parts of the Park, leading to changes in habitat and landscape.</p> <p>Two thirds of the Cairngorms National Park is above 400m; this includes the largest area of arctic mountain landscape in Great Britain. The Park is particularly rich in threatened species and habitats. Most of the agricultural land within the Park is used for grazing livestock.</p>
VOLUNTARY	<p>The Voluntary Initiative is a UK-wide programme, introduced in 2001 and initially</p>

<p>INIATIVE</p>	<p>running until 2006, which was proposed by the crop protection industry as an alternative to a pesticide tax. In Scotland, 121,300 ha of land were under a Crop Protection Management Plan in 2005, and over 2,000 individuals had registered with the National Register of Sprayer Operators. It is in some cases difficult to separate regional data for key indicators from the national statistics. The Scottish implementation group reports a general awareness of the aims and purpose of the Voluntary Initiative and willingness to work towards them.</p> <p>The Voluntary Initiative, which is currently scheduled to end in March 2006, is recommended to be extended after that date, with a special focus on water catchment areas. A further recommendation is to make some of its measures mandatory.</p>
<p>QUALITY ASSURANCE SCHEMES (QUALITY MEAT SCOTLAND AND SCOTTISH QUALITY CEREALS)</p>	<p>In 2004/2005, QMS schemes have more than 11,000 members and SQC scheme has about 3400 members. Quality Assurance Schemes focus on improving market(ing) opportunities for agricultural products than on producing directly environmental benefits such as through agri-environment schemes. However, minimum requirements such as Codes of Good Practice and NVZ regulations need to be fulfilled by Quality Assurance Scheme members/participants. Membership in a Quality Assurance Scheme is one of the options farmers can choose from the menu provided in the LMC Menu Scheme. The Quality Assurance Scheme option has been popular with land managers and achieved a relatively high uptake compared to other options in the LMC Menu Scheme. Although the promotion of quality standards and, hence, products the consumer wants, can potentially help the farming sector to better utilise market opportunities, a high uptake of this menu option reduces the available funds for other agri-environment options and schemes, potentially constraining benefits of agri-environment tools.</p>
<p>SECTION 4</p>	<p>POTENTIAL AND TRENDS 2006-13</p>
<p>EXISTING POLICY COMMITMENTS FOR SCOTLAND WITH RESPECT TO AGRICULTURE AND THE ENVIRONMENT AND POTENTIAL FUTURE POLICY DEVELOPMENTS</p>	<p>A number of EU and international legislations and regulations and British policy initiatives set the framework for commitments and obligations for land management in Scotland. The Scottish Executive has responded by developing several strategies for different land use sectors and land use related-topics which translate the international and UK-wide commitments into national policy drivers. Some of the commitments listed have been fulfilled on time such as the implementation of the CAP reform measures. For other commitments like the Water Framework Directive, the first steps have been achieved, and detailed timetables have been put in place to achieve the final commitment. On the other hand, commitments related to organic farming and forestry appear unlikely to be achieved on time.</p> <p><i>ORGANIC FARMING</i></p> <p>A significant change in the amount of arable land and improved grassland converted to organic production is required (about a yearly increase of 4.66 percent in the share) to fulfill the commitment that these areas comprise 30% of Scotland's organic area by 2007.</p> <p><i>FORESTRY</i></p> <p>To achieve the target of 25 percent land cover with forests in 2050 would require yearly new planting of more than 14,000 hectares, assuming that the uptake rate does not decline over time, which seems unlikely, given that in later years increasing competition with other land uses would limit the uptake. Taking into account the significant lower uptake figures for forestry schemes and new planting over the last few years, this seems a rather ambitious target. Moreover, it is not guaranteed that an extensive tree cover would bring maximum environmental benefit in terms of biodiversity. Other habitats such as peatland habitats are characterized as being species rich and important for biodiversity as well as being an important pool and sink for carbon. Substituting such habitats by woodlands does not necessarily increase the biodiversity and environmental benefits.</p> <p><i>ENVIRONMENTAL COMMITMENTS</i></p> <p>Local targeting of specific problems and issues is one of the key elements of successful agri-environment policies. If schemes are devised locally, or if there is a</p>

degree of local priority-setting for schemes, this can provide an opportunity for farmers and other stakeholders to become more involved in the process of agri-environment scheme development, giving them a sense of ownership of this process, which could result in more targeted schemes and more participation, consequently improving potential environmental benefits.

Given the strong linkages between biodiversity commitments, resulting from the Gothenburg summit and the Scottish Biodiversity Strategy, and the potential policy tools (agri-environment support) to deliver biodiversity benefits through land management, biodiversity targets and measures need to be specifically considered in agri-environment schemes, clearly defined at local level. Moreover, while the Scottish Biodiversity Strategy aims to fulfill its commitments by 2030, the Gothenburg Summit sets a significant earlier date of 2010 to halt biodiversity decline.

INTEGRATED APPROACH TO LAND USE POLICY

Environmental benefits would potentially be improved by an integrated approach to define an integrated land use strategy bringing together different land use sectors (e.g. agriculture and forestry), taking more into account the objectives of the WFD and Kyoto Protocol and designing CAP policy tools and incentives accordingly.

Future policy changes such as the new Rural Development Regulation (RDR), for the programme period 2007-13, have an important impact on the policy commitments and the translation of such EU-wide policy changes into a national policy framework, in this case a new Scottish Rural Development Plan (SRDP), and will provide scope to revise and adjust existing support for environmentally friendly land use and management. Alongside the new SRDP, Scotland will be developing a Scottish Rural Development Strategy for the first time, to form one component of the UK rural development strategy. **The development of such a strategy provides the perfect opportunity to integrate high policy commitments and objectives across the wide sphere of rural development and encourage an integrated approach.**

As outlined in the strategic guidelines of the new RDR, measures in axis 2 should be used to achieve environmental objectives, such as those related to biodiversity and preservation of high nature value farming and forestry systems, water and climate change. Moreover the guidelines require direct contribution of measures in axis 2 to the implementation of the agriculture and forestry Natura 2000 network, to the Gothenburg commitments to halt biodiversity decline by 2010, to the WFD objectives and the Kyoto protocol targets for climate change mitigation. **These are a number of important environmental commitments to be taken into account when axis 2 measures, including future LFA support, are designed and defined at national level.**

LMCs could provide new opportunities to further integrated farming support with wider rural development. Public good provision through LMCs could potentially be improved, if LMCs form part of a wider rural development programme of measures aimed at environmental improvement. **An integrated approach to LMCs as an integral part of rural development schemes is likely to deliver environmental advantage as joined up delivery mechanisms will ensure that sectorally-focused policies do not conflict. This is important with respect to economic development programmes.**

Finally, anticipated future CAP reforms such as a revision of the Single Farm Payment, for example moving from the historic-based payment to area payments, are expected to have a large impact on land management and the farmed environment. Implementing the SFP in two stages, first as historic based payment and then after a couple of years, revising the scheme to an area based scheme would allow the farming sector to adjust to the rather big policy change over time without experiencing decoupling and higher modulation rates and redistribution effects at the same time. **It seems rather doubtful to continue with the historical entitlement single farm payment in the longer term because it will not lead to sufficient delivery of the environmental and rural development objectives sought by CAP reform, and it would become increasingly untenable to deliver public funding on the basis of the agricultural activity in an increasingly**

	remote historical period. However, while in Scotland, at this stage, no concrete intention or timetable to change the SFP to an area-based payment has been indicated, in England the SFP has been implemented as a hybrid between historic-based and flat rate payments and will be transformed to a regional area-based payment in 2012.
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Looking at the previous reports, despite there only being 8 years between them, there are some specific differences in both topics and emphases between Egdell (1999) and the earlier State of the Scottish Environment 1991 report of Dargie and Briggs (1991). These are worth noting. Although some of these may be related to their different reporting briefs, it is clear that some issues, like “acidification”, have dropped off the environmental agenda, whilst others (e.g. recreation and access) receive much more attention. There is also a developing awareness of new issues (e.g. GM crops, sewage sludge disposal to agricultural land). Notably, however, the links between and agriculture and climate change exclude any reference to management of soil organic matter. Both reports conclude with comments concerning the importance of the Common Agricultural Policy in relation to future changes in the farmed environment of Scotland implying that they both accept changes in agricultural policy as the principal driver of future agricultural changes in Scotland.

6 years after Egdell’s report from 1999, agricultural policy is still the principal driver of agricultural changes, both recent and future. A continuous process of reform of the CAP changes the incentives for the management of the farmed environment, moving away from production-related incentives to income transfer and public good provision. However, although with the introduction of the Rural Development Regulation (Pillar 2) in the Agenda 2000 reform and the introduction of decoupling and compulsory modulation in the 2003 reform more emphasis and funding has been put on rural development and agri-environment, focus is still mainly on farm income effects and the CAP remains a sectoral policy. While new environment schemes and regulation/directives have been developed, lack of local targeting (spatial instead of sectoral focus) and lack of integration between new directives and the CAP constraint the benefits of environmental policies. Environmental benefits would be improved by an integrated land use strategy bringing together different land use sectors (e.g. agriculture and forestry) and taking more account of the objectives of the WFD and Kyoto Protocol and designing CAP policy tools and incentives accordingly.