

How can we get the best from our land?

Putting integrated land use into practice

A report to Scottish Environment LINK
by John Thomson, June 2012



The voice of
Scotland's
environment
community



This report was commissioned by the Sustainable Land Use Taskforce of Scottish Environment LINK and the work was undertaken by John Thomson, an independent land use consultant, during March-May 2012. The report is intended to contribute to discussions on the implementation of the Scottish Government's Land Use Strategy, a requirement of the Climate Change (Scotland) Act 2009. The LINK Taskforce was instrumental in calling for an ambitious and forward looking LUS that set out a long term vision for sustainable land use and how to achieve it.

The consultant wishes to thank the numerous individuals and organisations that contributed views during the drafting of this report.

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Published by Scottish Environment LINK

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Executive Summary

As a society, we make many, complex demands of Scotland's limited land resources. In recent years there has been a growing recognition that land has multiple outputs and must deliver multiple benefits: an idea captured in the term 'integrated land use'. As a result a real effort has been made to reduce the tensions and incompatibilities in the public policies that influence the way that it is managed. The conceptual framework underpinning much of this thinking is the so-called 'ecosystem approach'. In Scotland, the principles to guide its application were set out in 2011 in the Land Use Strategy.

The challenge now is to translate those principles into action on the ground. Multi-purpose land use of the kind envisaged has much to offer land managers. One major attraction is a diversified income stream, some elements of which, as payments for vital public goods, should be more stable and dependable than increasingly volatile commodity prices. Other potential benefits include greater social interaction, increased job variety and satisfaction, and an improved living environment.

Against these advantages must be set a possible requirement for increased investment and a wider range of skills, and the risk of over-dependence on forms of public support that may not remain available in the longer term. Not every holding has the same capacity to deliver multiple benefits, and very often cooperation across holdings will be needed to achieve the best outcome.

The context in which land managers have to decide how far to take their businesses down a multiple benefit path is one in which the prices for most commodities are relatively firm and there is a renewed concern about the planet's ability to feed a growing human population. In these circumstances most of them are going to require convincing, either by compelling argument or by powerful financial inducements, that it is worth their while to take on the challenges involved in managing land in this way.

Although the notion of integrated land use is far from new, there are relatively few good examples of its practice. The reasons for this are many and include cultural as well as economic and practical factors. In particular it is clear that if land managers are to play their part in providing the many public goods for which society relies upon the land, they will need not just appropriately targeted and designed financial incentives but a good deal of help and advice.

One key aim must be to nurture, through the education and training that land managers receive, a culture of responsible long-term stewardship. This requires land managers to understand the multiple functions of land and the environmental processes that it supports. And these messages must be consistently reinforced by the financial and policy signals that government sends out.

Another prerequisite is to clarify through some form of strategic planning process the contribution that individual land holdings can make to achieving an optimal use of natural and cultural resources within their wider area. The process involved must be an open and

inclusive one, involving all those with a significant stake in the outcome. The choice of unit for such an exercise is far from straightforward: both bio-geographic units, such as river catchments, and administrative ones have their attractions.

Whichever option is adopted, it is crucial that proposals and priorities are not developed in isolation from those emerging in surrounding areas. It should be a particular responsibility of the participating national bodies to ensure that the wider picture was taken into account in this way.

The sharing of information about the resources of an area, and the generation of a common perception of the issues facing it, are essential first steps in the strategic planning process. One vital underpinning assessment is of its ecological health, drawing upon the growing body of expertise in this field.

A strategic planning process of this kind must complement, rather than duplicate or cut across, the existing town and country planning system. But it is crucial to make sure that the two are in harmony. The next iteration of the National Planning Framework should explain how to achieve this.

The process is perhaps best initiated by a consortium of the public bodies with the most direct stake in land management decisions: FCS, SEPA, SGRPID and SNH. But the active participation of local authorities is indispensable and if it proved possible to find suitable candidates, day-to-day leadership might be entrusted to recognised “honest brokers”.

A fundamental requirement for the success of the whole approach must be a clear link between the desired outcomes identified through these strategic plans and the public financial incentives available, notably through the SRDP. This can best be achieved through a strongly decentralised SRDP regime, incorporating regional budgets.

To secure maximum value for the public funds deployed, good quality advice and a degree of active facilitation are crucial. The aim is both to actively promote to individual land managers the options that can contribute most to the attainment of the wider vision for the area and to encourage the collaborative initiatives that are frequently needed to realise these ambitions.

Like the Land Use Strategy itself, a regime on these lines requires regular updating. The best option might be to link it to the CAP cycle (currently 7 years), as this would in all likelihood be the principal source of funding.

Ideally, this strategic planning process should be rolled out across the country simultaneously, thereby providing a framework for all the other related processes currently in train. But this may be unrealistic, in which case taking a pilot approach in selected areas to test its viability seems appropriate. A challenge fund could be one way of stimulating interest in such an initiative.

1. Integrated land use: why we need it and what it involves

The fundamentals

1.1 ***Human beings rely on the land.*** As terrestrial mammals, we have no choice: the land is both our natural habitat and our psychological home. ***It supplies us with virtually all the basic necessities of life.*** Even in an advanced technological society, we depend on it for most of our food and for practically all our drinkable water. The vegetation that it supports plays a vital role in maintaining a breathable atmosphere. The processes that it harbours are constantly converting the unwanted and sometimes toxic into the essential and life-giving. Most of the energy on which we rely, though ultimately derived from the sun, is mediated by the land and the other life that it sustains (or has sustained) into forms that we can use.

1.2 ***The land has also long been a source of pleasure and enjoyment, of physical relaxation and spiritual refreshment.*** Outdoor recreation has burgeoned from the days of the exclusive royal hunting forest to the myriad pursuits of today, some physically demanding, others simply mentally nourishing. Though our current aesthetic appreciation of landscape is often traced back to the picturesque movement of 18th century Europe, it is evident from art and literature that people of all kinds and cultures have drawn inspiration from natural beauty for far longer than that.

1.3 ***The land that surrounds us today tells the human story; it bears witness to our past.*** Partly for this reason, and partly because our surroundings imprint themselves so firmly upon us – especially in childhood – the landscapes with which we are familiar help to shape our identity. Not for nothing did previous generations talk of people “belonging to” a place.

1.4 Given this reliance upon the land, it is hardly surprising that ***the possession and control of it has also from time immemorial been the source of power and status.*** The way in which property rights are distributed is one of the defining characteristics of any society, with far-reaching implications not just for social relationships but for the functioning of the economy and the very manner in which natural resources are viewed and treated. Even in this day and age, the appetite for land ownership appears as insatiable as ever.

Our growing demands on the land

1.5 ***As the human population has grown, in numbers and often also in affluence, so too has the pressure on the resources of the land.*** In Europe, the gradual intensification of land use evident in the late 19th and early 20th centuries accelerated after the Second World War. In the UK some of the most obvious and emotive signs of the increasing stress that resulted were declines in the richness and diversity of wildlife and the loss of landscape character.

1.6 ***Over time it became apparent that biodiversity and landscape quality were not the only public interests that were suffering as a result of the drive for increased production.*** So too were the quantity and quality of water supplies, the capacity of active peat bogs to store carbon and people’s opportunities to enjoy the countryside. Even the inherent productivity of the land was being impaired with certain management practices leading to problems such as soil erosion and compaction.

1.7 ***This intensification of land use was made possible by technological advances but was driven in large measure by financial reward, both from a market regulated to guarantee high rates of return and from public subsidy*** (in the form of both grants and tax reliefs). Many people viewed the role played by public subsidy as particularly perverse. Not infrequently one part of the public purse was paying land managers not to undertake activities which another part would have rewarded them for pursuing.

Policy integration

1.8 Out of this sorry state of affairs grew an awareness of the multi-functional character of land and of the need for public policy to have regard to all the likely consequences of the options being considered. Since the 1980s ***an effort has been made to eliminate the most obvious inconsistencies and contradictions in policy objectives and priorities***, especially where public money is at stake. The declared goal has been one of integrated policy, which seeks as far as practicable to harmonise the various sectoral objectives and the instruments deployed to pursue them. The phrase “joined-up government”, although of much wider application, might well have been coined specifically to describe the aspirations in the field of land use policy.

1.9 This development has gone hand in hand with another, reflecting the dominant economic view about the circumstances in which public subsidy is justified. The consensus over the past quarter century or so has increasingly been that such intervention is warranted only as a means of correcting perceived “market failure”. This precept dictates that for goods and services for which a properly functioning market exists, or can be created, the producer’s return should come from that market. The inter-play of market forces should determine what that reward should be, and who should obtain it. ***Payments from the public purse should be reserved for those circumstances where, in the absence of such a market, there would otherwise be an under-provision of the desired benefits.***

1.10 This philosophy has come increasingly to the fore in debates about public support for land using activities, and particularly the future of the European Union’s Common Agricultural Policy (CAP). Here the legally enforceable obligation to respect the free market principles of the World Trade Organisation (WTO) has driven a progressive phasing-out of production-linked subsidies and market support measures, and a growing emphasis on payments for the provision of public goods. ***There has, however, been little agreement over the precise nature of the public benefits sought, or the relative weight to be attached to them.***

1.11 ***Until recently there has thus been a fairly steady, if not very rapid, trend towards more integrated policy, based upon an economic model which holds that the returns for primary production should ultimately come from the market alone.*** Public intervention, whether in the form of regulation or of subsidy, would in this scenario be confined to correcting market failures and to ensuring an adequate supply of public goods.

Current concerns

1.12 Over the last few years, however, two additional considerations have become very much more prominent in the public discourse about land use:

- (i) ***renewed worries about the world's capacity to feed a rapidly expanding human population and about the security of future food supplies; and***
- (ii) ***a desire, against the background of the credit crunch and the subsequent economic downturn, to extract the maximum economic benefit from natural resources.***

1.13 This renewed ambition to maximise the economic output from land has had to recognise that its potential varies hugely over a country as geographically and climatically diverse as Scotland. To reflect this fact the goal has sometimes been expressed as one of maximising "natural resource productivity". This concept underlay the Scottish Government's year-long Rural Land Use Study launched in September 2008. And in many ways it underlies the thinking in the Land Use Strategy published in March 2011¹.

The ecosystem approach

1.14 In this evolving policy context ***it becomes even more important to describe and analyse systematically the many ways in which land use contributes to human well-being.*** The framework most commonly used for this purpose currently is that of ecosystem goods and services. The Ecosystem Services Project, led by Defra, identified four categories of such services:

- ***Supporting services:*** The services that are necessary for the production of all other ecosystem services, including soil formation, photosynthesis, primary production, nutrient cycling and water cycling
- ***Provisioning services:*** The products obtained from ecosystems, including food, fibre, fuel, genetic resources, biochemicals, natural medicines, pharmaceuticals, ornamental resources and fresh water
- ***Regulating services:*** The benefits obtained from the regulation of ecosystem processes, including air quality regulation, climate regulation, water regulation, erosion regulation, water purification, disease regulation, pest regulation, pollination, natural hazard regulation
- ***Cultural services:*** The non-material benefits that people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation and aesthetic experiences – thereby taking account of landscape values.

¹ Getting the best from our land: a land use strategy for Scotland Scottish Government March 2011

The human dependence on nature which this approach encapsulates, and the partnership with nature for which it calls, informs the Land Use Strategy and is explicitly commended in Sections 3.5 and 3.6.

The Land Use Strategy

1.15 Formally, the Land Use Strategy fulfils a requirement of the Climate Change (Scotland) Act 2009. Section 57 of this act obliges Scottish Ministers “to produce a land use strategy, setting out:

- (a) the Scottish Ministers’ objectives in relation to sustainable land use;
- (b) their proposals and policies for meeting these objectives; and
- (c) the timescales over which these proposals and policies are expected to take effect”.

The statutory requirement thus has its roots in the quest to mitigate and, where necessary, adapt to the impacts of global warming, and places a welcome emphasis on the need to use land sustainably, in line with the principles of sustainable development.

1.16 ***The Land Use Strategy ascribes to Scotland’s land very much the sort of multi-functional role outlined earlier.*** It sets out a Vision and three Objectives, corresponding broadly to the accepted pillars of the sustainable development tripod. These are underpinned by ten principles, of which three are particularly pertinent to the issue of integrated land use:

- (a) opportunities for land use to deliver multiple benefits should be encouraged;
- (c) where land is highly suitable for a primary use (for example food production, flood management, water catchment management and carbon storage) this value should be recognised in decision-making: and
- (d) land use decisions should be informed by an understanding of the functioning of the ecosystems which they affect in order to maintain the benefits of the ecosystem services which they provide”.

1.17 The section of the Strategy entitled Land Use and Business then goes on, under the Objective “Land-based businesses working with nature to contribute more to Scotland’s prosperity”, to extol (in Section 2.2) the virtues of integrating different land uses. And in Section 2.6 it commits the Scottish Government to “*work in partnership with land managers to enable them to deliver the produce, the goods and the services that the country needs. Correspondingly, we will continue to develop the policy framework to facilitate multiple uses of land*”.

1.18 The Strategy is therefore clear. ***The way that land is used affects society in a wide variety of different ways. It is very important that those taking decisions about land use are well aware of all the potential impacts of those decisions. Society at large has an interest in ensuring that the sum total of these decisions yields as near optimal as possible***

an outcome for the country as a whole. And to maximise the chances of this happening government must provide the signals and inducements that will stimulate the desired mix of outputs, both within and across individual land-holdings.

Integrated land use

1.19 Optimising the outcome for society as a whole in this way is the goal – and the challenge – of integrated land use. It takes us a step beyond the integrated (ie internally consistent) policy that has been the declared objective for a couple of decades now. ***It is about translating a coherent set of overall policy goals into reality on the ground.***

1.20 This does not mean, as the Strategy itself is at pains to point out, that exactly the same weight will be given to each objective on every piece of ground. That would be neither realistic nor indeed compatible with the goal of optimising overall benefits. What is needed, however, is an understanding of:

- (i) which areas of land are likely to be able to contribute most to which particular objectives: and
- (ii) how these wider societal objectives can be reconciled with the aspirations and constraints of individual land managers.

1.21 Achieving this is likely to require ***an open, participative and iterative process through which information can be exchanged and differing options can be explored before a feasible preferred approach can be identified and adopted.*** The alternative – some form of imposed, top-down blueprint – would fail not just because it is incompatible with existing property rights and social norms. It would also lack the local knowledge and personal commitment vital to give such an initiative any realistic chance of success. Financial incentives alone, however generous, cannot be expected to induce a desired action if this runs counter to the interests and attitudes of those who own or manage the land. Compromises will be necessary and the outcome in almost every case will be the best achievable rather than some theoretical ideal. Given the inherent difficulty of identifying the ideal, however, this is unlikely to be a serious shortcoming. The task is indeed at least as much about ***building mutual understanding, cumulating knowledge and generating a sense of common purpose*** as it is about achieving a specific outcome.

2. The benefits for land managers

The economic benefits

2.1 The Land Use Strategy presents the advantage of integrated land use to land managers primarily in terms of a ***diversified income stream***. It highlights the benefits that this can bring them through spreading risk and helping their businesses to adapt to change.

2.2 Other things being equal, a diversified enterprise is certainly likely to be more resilient in the face of the sort of commodity price volatility that has become increasingly pronounced in recent years. Even payments which because of the basis on which they are calculated do not add significantly to net income, such as agri-environment payments, can contribute a welcome element of ***year-to-year stability*** to otherwise fluctuating incomes. This has been evident, for example, in the increasingly positive attitude towards goose management schemes. On Islay, for example, the dependable income from these eased the transition from dairying to suckler beef farming.

2.3 Similarly any payments which largely ***reward the continuation of existing beneficial practices***, such as payments to preserve intact peatlands for carbon sequestration purposes, are likely to be welcome. So too might opportunities to create jobs on the holding for family members who might otherwise have to commute to a nearby town to find employment and supplement family income.

2.4 Not all the economic benefits that may flow from better integrated land use will necessarily involve a new or more secure income stream. Some could involve the ***substitution of outputs from the holding itself for goods previously brought in***. An obvious example is the scope to replace purchased fossil fuel with wood fuel from new or better managed farm woodlands. Similar cost savings could arise from the replacement of inorganic fertilizers by animal manures, either through on-farm diversification or by purchase from livestock-keeping neighbours. From this perspective a move back towards more mixed farming, although at odds with the general trend towards ever-greater specialisation, could aid economic resilience. It would certainly be one readily recognisable example of integrated land use in action.

2.5 ***Novel income streams that offer the prospect of greater long-term stability*** are likely to be particularly appealing. This is clearly one of the attractions of the 25 year agreements for renewable energy generation under the Feed In Tariff, as it was in the past of long-term SNH management agreements. More strictly commercial deals, of the kind that might be possible for the sympathetic management of water catchments (either for public water supply or flood risk management purposes) or for carbon sequestration in peatlands or in timber crops, could also prove alluring.

... and drawbacks

2.6 It should be noted, however, that in many cases diversification will carry with it the need for up-front capital investment and/or additional labour from beyond the family. In these instances the benefits to be derived from spreading risk must be set against the ***additional***

financial exposure incurred. And almost inevitably the management of the business will become more complicated – itself a significant deterrent for the many land managers, especially those who see their jobs more as a way of life than as a commercial venture.

2.7 Many land managers are also wary of **becoming too dependent on public support** – and in particular on payments for the provision of public benefits – for the long-term economic viability of their businesses. Experience with the almost constantly changing basis of agri-environment payments shows them to have good reason for these suspicions, despite the short-term security that comes with involvement in such schemes.

Other benefits

2.8 The social and other non-economic benefits of integrated land use may prove at least as significant as the economic ones. As traditional land managing activities have become increasingly capital-intensive, many of those who make their living by them have grown isolated from wider society. Working long hours, with little company, coping with all the vagaries of the weather and the markets, and frequently beset by financial worries, life for them has become very stressful. The prospect of **engaging with others** in some form of common endeavour may against this background be very enticing for some. Even those who are initially hesitant may come over time to realise what is to be gained by such wider engagement and co-operation.

2.9 Finally, few people are so indifferent to their surroundings as to be impervious to the contribution that a good quality environment - attractive landscapes and an abundance of wildlife – can make to **their own well-being**. Environmentally benign land management, which gives due weight to these factors, can make **life better and more rewarding** for land managers themselves as well as the wider communities to which they belong. Indeed it can help to strengthen precisely that bond between people, the land and those who have custody of it that the Land Use Strategy seeks to nurture.

Barfil Farm

Barfil is a 145 ha farm in Galloway, covering a wide range of soil types and including a wetland SSSI. Starting with a farm audit carried out by FWAG, its owners have over 20 years managed it on a low input/low output organic regime using a variety of traditional livestock breeds, notably pedigree Galloway cattle. They pride themselves on their conservation efforts and have undertaken extensive woodland planting, largely of native species designed to yield high quality timber for furniture making and other premium uses, as well as fuel for a log-burning boiler which heats the premises. The farm was one of the first to install a wind turbine and a recent extension to the farmhouse itself has been built on passive house principles. Some of the traditional farm buildings have been converted to provide accommodation for a training centre running courses in human resource management. The woods have been laid out for extraction by horses, which are also employed to cultivate and harvest potatoes. Barfil's owners play a leading role in a cooperative venture seeking to establish a local abattoir to add value to the area's livestock production.

3. The current state of the land-based industries

3.1 Despite the prevailing economic gloom, ***all the traditional land-managing industries are currently relatively buoyant***. This optimism is largely attributable to the upward trend in commodity prices in recent years. The boost to confidence that this has provided has been somewhat marred by the increased price volatility mentioned previously, and by the increasingly erratic weather patterns associated with global warming. Contentious also is the degree to which higher consumer prices are perceived to be benefitting retailers and processors, rather than primary producers. Moreover, considerable uncertainty surrounds the financial support regime, with doubts as to the pound/euro exchange rate and the size of the future budget for the Common Agricultural Policy, as well as the basis on which payments will be made.

3.2 ***The overall mood in the land use sector is nonetheless markedly more upbeat than for many years***. There is a feeling that in policy circles more attention than of late is being paid to the value of the traditional primary outputs of food and fibre. Land managers take heart also from the widespread political desire for simpler procedures and smarter regulation.

i) Agriculture

3.3 With the partial exception of the rapidly evolving dairy sector, ***most parts of the industry are currently faring relatively well***. Beef and lamb prices have strengthened and the 'retreat from the hills' that was causing such alarm in the sheep sector appears to have abated, and possibly halted entirely. The growing taste for meat and dairy products in the increasingly affluent major economies of the developing world, such as China, India and Brazil, is pushing up global demand and more than offsetting some domestic concerns grounded in agriculture's contribution to greenhouse gas emissions and the obesity epidemic associated with current lifestyles. The growth in these developing markets is helping to allay anxieties about the likely effect of the continuing, albeit fitful, drive to open up domestic markets for agricultural products.

3.4 As ever, worries remain. ***Input costs – especially for fuel and fertilizer- continue to rise steeply***. Tighter controls in areas such as nitrate pollution have already necessitated heavy investment and further regulation seems inevitable as government seek to reduce diffuse pollution and greenhouse gas emissions. On the policy front it is generally accepted, although not welcomed by many, that there is likely to be a switch from an historic to an area basis for income support payments under Pillar 1 and that a degree of redistribution of payments is the inescapable consequence. But just how much, and the extent of the 'greening' conditions that will be attached to the new style payments, remain the source of much speculation and anxiety within the farming industry.

3.5 Against this background, ***the industry continues to polarise***. The large, relatively intensive units are tending to expand further and to become for the most part still more specialised. Meanwhile there is a proliferation of smaller, part-time farmers, often with motivations far removed from those of their bigger, more commercial brethren.

3.6 Amongst farmers, as opposed to estate-owners, **multiple benefit agriculture is perhaps most likely to appeal to the smaller-scale operations, particularly in the less productive areas**, on the basis that it offers the prospect of a diversification of income sources with little requirement to change their existing management practices. This assessment must, however, carry the heavy qualification that these farmers will only be seriously attracted if they have confidence in the long-term dependability of such public support.

3.7 Another **significant caveat concerns the practicability of achieving much in the way of integrated management on holdings of this scale**. Truly worthwhile outcomes are likely to require collaboration across holdings, of a kind and to a degree which has not hitherto been a characteristic of the Scottish farming scene.

3.8 Larger-scale, **more commercially-minded farmers are less likely to be lured into multi-benefit land use by financial incentives** – unless they are as generous as those currently available for renewable energy development. Stronger motives for them may be the potential to guard against regulatory intervention, the scope for efficiencies in production and in some cases personal interest, whether in sporting use or general amenity. In some instances, however, these considerations could prove to be very powerful motivators. In such cases their professionalism and the resources at their disposal could well make them very effective suppliers of non-market benefits.

ii) Forestry

3.9 **Timber prices too currently stand at an historic high**. This is reflected in the capital value of afforested land. An industry habituated to price fluctuations is wary of assuming that this state of affairs will persist for very long. But at present the outlook remains promising, especially as there is a rapidly developing biomass market, strongly driven by government energy policy. Indeed, government policy as a whole is highly supportive of the forestry industry, reflecting the perceived value of trees as a carbon store and source of sustainable building materials, as well as the industry's role as an important provider of rural jobs.

3.10 These objectives underlie the Scottish Governments' declared ambition of achieving 25% woodland cover by 2050. Ministers appear to have softened their commitment to this overall target in the face of alarm from sheep farmers fearing a further major loss of upland grazing. But they remain wedded to the goal of planting an extra 100,000 ha over the next decade. **The industry sees this scale of planting as essential to maintain supplies through the middle decades of the century** - to which end it is also pressing for a high proportion of the trees planted to be 'productive' conifers.

3.11 Given the constraints on planting on deep peat, **one route to a further substantial expansion of woodland cover lies in a better integration of farming and forestry**. Superficially the attractions of this are manifold: a diversification of farm income, more shelter for stock, new opportunities for field sports, materials for on-farm use (especially fuel for biomass heating). But for real integration to be widely achieved the style of forestry

adopted would have to differ markedly from the existing model, which requires large-scale blocks of consistent age.

3.12 This would be just one of the **major cultural adjustments required** on the part of all concerned. There is little or no tradition in Scotland of the farmer-forester, or forester-farmer, who is such a feature (for example) of the rural Scandinavian economy. The creation of such a culture, even if it were feasible, to create the pattern of land use that would go with it, would be the task of generations rather than years.

3.13 **But a start is being made.** The industry is already discussing with farming representatives how far it might be possible to build up economically viable forestry blocks (minimum size 25-30 ha) through the combination of several smaller blocks – say of 5 ha each – within a wider area (possibly in a single valley). Similarly the Forestry Commission is already creating starter farms within areas of land that it has bought primarily for tree planting. It might be possible to extend this approach to allow it to purchase larger areas of land and to restructure and sell them off in a way that fostered a combination of agricultural and forestry activity. And environmental and recreation bodies - voluntary and public - have an interest in encouraging tree planting that contributes to the creation of habitat networks, wildlife corridors, attractive landscapes and linear access opportunities. By judicious interventions they too could help to secure a better integration of farming and forestry.

iii) Game management

3.14 **This is the sector with the strongest existing track record of integrated management,** probably because it is the one with the least prospect of being economically viable on its own (in part owing to the absence of public subsidy). It should perhaps be divided into three sub-sectors:

- low ground sport shooting (predominantly pheasants but also partridge, duck, geese and waders), traditionally integrated into farm management and providing much of the justification for establishing and maintaining many of Scotland's farm woodlands
- grouse and other moorland shooting, dependent on the maintenance of an arrested habitat (heather moorland) which would not otherwise exist on anything like its present scale, usually achieved through a combination of muirburn and the deployment of grazing livestock, especially sheep
- deer stalking, which for red deer is essentially an open ground activity in Scotland, although it would be possible to undertake it as a woodland sport, as on the continent and in Scotland for roe deer. Open hill shooting of this kind is not reliant on the presence of other land uses, although sheep have in the past commonly been run on land managed for stalking. Without extensive fencing deer in the densities that have come to be associated with sporting estates are indeed highly inimical to woodland creation and management.

3.15 Once again, **most game management enterprises seem to be going through a relatively prosperous phase.** After a slightly rocky patch a few years back most low ground

shoots – and especially the better quality ones – are doing well. The number of people participating in such shooting remains broadly stable and the income from shooting leases makes a not insignificant contribution to overall farm income. Grouse moors have seen two of the best years for a very long time, with some of the largest bags since the 1930s and shooting fees running at £150-170 a brace. The overseas market for deer stalking remains strong, with the effort that estates have been making to improve the quality of service offered bearing fruit in an increase in the average fee per stag from about £250 in 2005 to £350-400 today.

3.16 ***The degree to which game management is currently integrated with other land uses can be seen as running on a spectrum*** from lower ground, where it is usually a subsidiary activity, to the highest, where it is dominant (and indeed with the exception of conservation and some specific recreations, probably the only feasible use). There have in the past been some conflicts between sporting and other recreational uses, and there remains some potential for these, but the access provisions in the Land Reform (Scotland) Act 2003 have gone far to ease the tension.

3.17 As indicated, low ground shooting tends to be part of a multi-use enterprise, and a longstanding form of business diversification. Upland shooting (whether for grouse or deer), meanwhile is most often pursued within large estates which are themselves diversified enterprises. ***Such estates are indeed probably the main current examples of truly multi-functional land use businesses***, operating on a scale where it is not only possible to accommodate activities which would be incompatible on a smaller area of ground but also to employ the wide range of skills required to run such a diverse undertaking. Importantly there is also some tradition of co-operation between neighbouring landowners (notably through deer management groups), though this is far from universally effective. Given the weak economics of these large sporting estates (most are run at a loss and cross-subsidised by other enterprises), some further diversification could well be beneficial.

3.18 ***A move to focus more on the provision of such ecosystem services as carbon storage, water management, biodiversity and recreational opportunities) might, if appropriate funding could be secured, transform the economies of such upland enterprises.*** This would, however, require at least two substantial changes in attitude:

- i) an acceptance on the part of landowners of greater external interference (especially with deer management) than they have traditionally been prepared to tolerate; and
- ii) a willingness on the part of the wider land managing community (and indeed society as a whole) to recognise that management for these non-traditional outputs merits reward from the public purse.

Glenlivet estate

Glenlivet is a 23,000ha estate in the Grampian Highlands, managed by the Crown Estate. It includes about 30 tenanted farms and approximately 4,000 ha of largely commercial woodland. Management is geared to securing the long-term sustainability of employment in the area, with environmental sustainability seen as fundamental to this. Restructuring of the plantation forests and more active management of the birch woodlands has been designed to improve wildlife habitat and to create additional jobs. The estate has encouraged diversification into other fields such as trout fishing, clay pigeon shooting and water bottling, and especially into tourism. It has created a 100 mile network of paths and cycle tracks, including elements specifically catering for local communities and the less able. It has put considerable effort into marketing the area, and has established an information centre and ranger service. As a result, it believes, the tourist season has been extended by at least 5 weeks.

4. The obstacles to integrated land use

4.1 ***The ideal of integrated land use is far from new.*** As acknowledged earlier, many (probably most) land managers have had an eye to more than the primary outputs of their holdings for a very long time. Farmers have prided themselves on the appearance of their land – not solely in terms of its agricultural productivity –and valued the opportunities for field sports that it provides. Forestry has moved markedly away from the model of Sitka spruce monoculture that prevailed in the mid-20th century. Industry guidelines and standards are designed to guard against water pollution and carbon release, and to integrate new planting and re-stocked areas better into the surrounding landscape. Upland estates, especially in the climatically more favoured parts of the country, have traditionally relied upon a diversity of land uses to achieve even semblance of economic viability.

4.2 ***Over the past quarter century this long-standing awareness of the multiple outputs of land and freshwater has been placed within a more systematic and coherent intellectual framework.*** This is now most commonly described as ***the ecosystem approach*** – a concept explained in Section 1 above and which embodies the notion that a healthy, properly functioning ecosystem will provide on a continuing basis a diverse range of services, from those satisfying the most basic material needs (water and food) to the aesthetic and spiritual (mental refreshment and uplift). This paradigm has found ready and widespread acceptance, as describing the world as it is generally recognised to be. It is increasingly reflected in public policy, from the global scale (eg the Millenium Ecosystem Assessment) to the national (National Ecosystem Assessment, Land Use Strategy, revised Scottish Biodiversity Strategy) and the local (growing recognition of its relevance to local development planning and flood risk management).

4.3 ***On the ground, however, good examples of integrated land use remain scarce.*** Public intervention is indeed having some impact in flagging up and protecting some of the wider public interests that can be damaged by the pursuit of purely private benefit. Sometimes this intervention has taken the form of regulation (as with controls over diffuse pollution and forestry practices) and sometimes of incentive (notably agri-environment measures designed to promote biodiversity, landscape and cultural heritage interests). But even in aggregate it has not been sufficient to embed the principle that the management of land is a matter of long-term stewardship, with the goal of ensuring that it remains capable of delivering in perpetuity the full spectrum of goods and services for which we rely upon it.

4.4 Why is this so? ***An honest assessment must acknowledge a complex mix of contributing factors.*** These include:

- i) the inherent complexity of the task;
- ii) inadequate information about the resources to be managed;
- iii) the failure to spell out a coherent set of goals for an area to which individual land managers can relate;

- iv) the absence of economic reward for many of the activities required to deliver public benefit;
- v) the ever-greater specialisation characteristic of knowledge-rich societies and advanced economies;
- vi) the policy segregation that tends to accompany and reinforce this degree of technical specialisation;
- vii) education for land managers which likewise fosters a relatively narrow view of their calling and responsibilities;
- viii) a complex land tenure regime;
- ix) a paucity of land management advice dedicated to promoting an awareness of, and ability to act upon, the demands of environmentally sustainable stewardship;
- x) the continuing decline in the amount of labour on the land;
- xi) 'cultural' divisions

The following paragraphs examine each of these factors in greater detail:

Inherent complexity

4.5 The concept of multi-functional land use, although to a degree intuitive, is not an easy one to follow through to practical implementation. Very often individual land managers will find it hard to work out how the way that they operate will affect, for example, water flows lower down the catchment, the availability of foraging territory for a wide-ranging bird or the perception of the whole region as a tourist attraction. Much contemporary management theory can be boiled down to the maxim 'keep it simple'. Yet ***the task of understanding, weighing up and trading-off all the considerations relevant to multi-benefit land use is inherently complicated.*** However knowledgeable or sympathetic he or she may be to the underlying objective, ***the individual land manager is unlikely to be able to do much more than observe certain basic principles without a good deal of help.***

Inadequate information

4.6 The range of factors that must be taken into account in integrated land use is mirrored in the extent of the information required to underpin it. Often the data available are incomplete or inadequate. Even more frequently ***they have not been brought together in a fashion that makes them easily accessible and comprehensible to those who need to draw upon them in their day-to-day decision-making.*** The systematic assembly of relevant information that has become an accepted feature of the town and country planning system has never been extended into the wider land use arena.

Lack of clear, locally-specific goals

4.7 'Tell me what you want' has long been the land manager's plea when confronted with passionately expressed criticism from one quarter or another, or more likely several simultaneously. ***As a society we have not been good at taking stock and setting out holistically the range of outputs that we are seeking from our land.*** As the Land Use Strategy itself acknowledges, this has been true at national level; it is even truer more locally. The existing land use planning system is a partial exception to this; we have, for example, become quite sophisticated in our efforts to predict the need for housing and to allocate the necessary land (taking into account a broad range of relevant considerations and implications) down to individual community level. But the scope of this system is largely confined to built development. Despite attempts to bring some major land use changes, such as afforestation, within its compass through supplementary planning guidance (Indicative Forestry Strategies and now Forestry and Woodland Strategies), ***the town and country planning system as we currently know it was never designed to influence the full range of land use activities.***

4.8 ***There would, moreover, be fierce resistance to any attempt to widen its scope in this way.*** Some of this would come from the planning profession, many of whose members would balk at the extra work and responsibilities involved. But the most vehement opponents would be land managers themselves who, long accustomed to having even their building activities regulated with an extremely light touch, would be deeply hostile to an extension of control to their wider decision-making.

4.9 The challenge, therefore, is to find a way of providing land managers with the necessary signals about where the wider public interest in the management of their land lies, without imposing on them some rigid blueprint as to how precisely they should meet those expectations. ***The key to a successful solution must surely lie in an open, inclusive process for identifying the goals and a regime for achieving them which provides both a financial reward and a level of help and support commensurate with the public benefits to be attained.***

Financial reward

4.10 ***It is generally accepted that the reason that many of the services that land provides are currently under-supplied is that there is no market for them,*** and that any financial incentive that is provided from the public purse is either too small or otherwise viewed as unappealing. There is, of course, a legitimate debate to be had about how far some public interests in the land should be safeguarded through regulation, rather than purchased. But where active management is required the case for payment is compelling. Given the current and prospective constraints on public expenditure, ***might there indeed be opportunities for creating markets for some of these public benefits which would provide the necessary incentive at no cost to the taxpayer?*** Carbon storage is an obvious possibility.

Specialisation

4.11 A trend to the ever-greater specialisation of economic activity has been a feature of human progress to date. The forces propelling it in the land use sphere remain extremely powerful. ***Technological advance is the key driver but it is reinforced by the high levels of expertise and capital investment required to take maximum advantage of its fruits.*** How can this seemingly inexorable tendency be squared with the desirability of integrated land use? Part of the answer to this question may lie in redefining the goal towards which the innovative effort is directed – the broader stewardship of natural and cultural resources rather than food production, for example. But part must also lie in creating a broader matrix of land uses, delivering the desired overall outcome, within which (subject to statutory requirements) individual enterprises can pursue their specialist activities.

Policy segregation

4.12 ***The existence of policy ‘silos’ has long been recognised as a serious impediment to better integrated land use.*** For all that, it is not an easy obstacle to overcome. It reflects both the tendency towards specialisation mentioned previously and a natural human inclination to identify with and defend a certain ‘territory’. Thus those responsible for developing policy in a particular field can all too easily come to embrace and promote the perceived interests of those with a direct stake in it, as articulated by their most vociferous representatives. Up to a point, this understanding and empathy is desirable, as a means of ensuring that policy is well-founded and communications are effective. But taken too far, it can privilege sectoral interests over all others. Arguably this has happened in the realm of land use, where it has been much easier to engage with the traditional land using ‘industries’, and more recently with communities of interest such as environmentalists, than with wider society. ***The main corrective lies in an awareness of this ever-present danger and a sustained commitment to engage in open and purposeful debate as many as possible of those with a legitimate interest in the issues at hand.***

Education and training

4.13 ***The education system has both helped to generate and reflected the broader tendency towards ever greater specialisation.*** Worryingly, even some of the efforts that have been made to counter this by establishing avowedly multi-disciplinary courses and programmes have been abandoned as traditional approaches and modes of thinking have re-asserted themselves. A key challenge in this arena is to make sure that the training offered keeps pace with changing demands. Importantly, ***if it is agreed that the principles of integrated land use are of enduring relevance, they must be embodied in a broad-based curriculum that is adhered to over many generations of students.*** If all land managers are to come to regard themselves as, in a meaningful way, the stewards of the nation’s natural resources, this is the attitude that must consistently be inculcated through education and training.

Land tenure

4.14 Any form of land tenure in which more than one person or body has a legal stake in the management of land inevitably complicates decision-making. Arrangements such as tenancies tend to militate against the integration of activities and objectives with differing timescales and bases of funding. Even if they can raise the money, tenants rarely have the same interest in investing in the long-term future of their holdings as those who own them outright. And even where landlord and tenant are of one mind about the desired outcome, the tasks of securing the necessary funding and of apportioning the associated costs and benefits can be a highly complex one.

Land management advice

4.15 In the years after World War 2, as in the developing world to this day, an effective publicly-funded advisory (or 'extension') service was viewed as vital to securing the rapid, widespread uptake of new ideas, approaches and techniques. ***In more recent times reductions in public funding have resulted in the collapse of certain bodies (eg FWAG) dedicated to the provision of public interest advice and a much tighter focussing of effort on serving the perceived short-term financial interests of land managing clients.*** Advice of this more limited kind may help land managers to gain access to funding designed to benefit the public interest in land. But it is rarely effective in conveying to them the reasons why they are being encouraged to implement these measures, or the philosophy that underlies them. ***The current advisory system is not, therefore, up to the job of bringing about the more fundamental, cultural shift required to make a reality of integrated land use.***

Reductions in labour

4.16 Since the Industrial Revolution labour has moved steadily from land-based activities into first manufacturing and subsequently an ever more diverse services sector. Economically, this has reflected and been justified by higher labour productivity in these other sectors and it continues apace. ***This continuing substitution of capital for labour is good neither for public interest activities with a high labour component*** (for example the active shepherding which was in many cases at least as important as lower overall stocking densities in preventing the overgrazing of hill land by livestock) nor for the mental well-being of the increasingly isolated individuals concerned. It has also militated against the social interaction which can help both to spread good practice and to encourage co-operation between holdings. ***If the economic value of the public benefits flowing from environmentally sustainable land use was properly recognised and rewarded, more land-based jobs could be sustained,*** bringing a whole raft of benefits to rural communities and the rural environment alike.

Cultural barriers

4.17 Although there are numerous physical and economic barriers to better integrated land use, ***the most intractable obstacles are in a broad sense cultural.*** Some of these have already been mentioned or hinted at, as they stem in part from specialisation in technology and education, and from segregation in policy. But they go further than this and include:

- a deeply entrenched farming/forestry divide;
- the lack of a tradition of land manager co-operation;
- the attitudes engendered by a troubled history of landlord/tenant relations;
- distrust between the private, public and voluntary sectors;
- a suspicion of 'environmentalists' in land managing circles, often reflecting a perceived 'town and country' divide in outlook; and
- the politics of land ownership and land use.

4.18 In combination these attitudinal barriers greatly complicate the task of generating consensus around a shared vision of the future countryside and the coordinated action needed to make it a reality. ***But breaking them down could also yield rewards well beyond the already substantial ones that would flow from securing better integrated land use.*** Social relationships would improve and rural communities would be more likely to flourish. Opportunities for co-operation well beyond the land use arena might well be identified. ***The social and economic objectives of the Land Use Strategy might benefit at least as much as the environmental ones.***

5. What's needed to make it happen?

5.1 *If the principles of integrated land use are to be effectively implemented, two key requirements are:*

- (i) an understanding and acceptance on the part of land managers that all land use has multiple outputs and that as responsible stewards of the land they must have proper regard to all of these; and
- (ii) an attempt to work out on a planned yet pragmatic basis how land within any defined area should be managed to achieve society's overall objectives.

5.2 Together these two elements should be capable of yielding a pattern of land use that would supply all the goods and services that can realistically be expected by wider society and that would be compatible with the reasonable expectations and economic viability of the enterprises which take the day-to-day decisions about management. As indicated, this pattern of land use would not require the same weight to be placed upon individual objectives in every location, still less the same mix of outputs from every holding. On the contrary, ***the aim would be to optimise the overall outcome on the basis of the varying contributions that individual land managers and land holdings could feasibly be expected to make.*** How ambitious any vision could be in terms of the non-market benefits sought would depend, ultimately, on the availability of funds (from public and other sources) to pay for them and on the extent to which Parliament saw fit to regulate private activity to achieve them. It is, however, worth stressing that in the final analysis ***it is in everybody's interest to live within environmental limits and to maintain ecosystems healthy enough to sustain future generations.***

Responsible stewardship

5.3 **Education and training:** If that is the ambition, what must be done to realise it? In relation to land managers' attitudes, much will depend in the long run on the education and training that they receive. As emphasised above, ***it is essential that the principles of environmentally and socially responsible stewardship are firmly embedded in the curriculum and remain there.*** But that on its own will not be enough. The message that land managers receive must be a consistent one. Government policy and the signals that it sets out must be equally unequivocal.

5.4 **Incentives:** Crucially, ***the incentives that are offered from the public purse must be geared to encouraging the desired behaviour*** – and making it financially possible. In so far as is possible within EU regulations, ***this should involve looking again at rates of payment, to ensure that they properly reflect the scale of the public benefits sought and secured,*** not just the costs (whether direct or in income foregone) of supplying them. Inevitably this raises awkward questions about the valuation of environmental and other non-market benefits, on which opinions will always differ. But at least there should be an explicit acceptance that the most valuable use of land may well be for the provision of public benefits (often in combination with a reduced level of market income).

5.5 Likewise ***government and society must accept the enduring nature of the financial commitments necessary if public benefits are to be secured for the required length of time*** – which in many cases means in perpetuity. Over time changes in economics and technology, and even social expectations, may make it possible to achieve the desired public ends at lower cost to the land manager, or to create new livelihoods and lifestyles which can more easily be combined with the public benefits sought. But the reality is that the regulating and supporting ecosystem services will remain essential indefinitely. And if history is anything to go by, the cultural services are likely to be ever more highly prized, at least for as long as society grows more affluent and better educated. ***The limited duration of current agri-environment agreements is totally inadequate in this respect and risks disillusioning its land managing beneficiaries as well as wasting the public investment involved.***

5.6 ***Regulation:*** Juicier carrots should be accompanied by sharper sticks. ***Rules regarding, for example, cross-compliance and environmental impact assessments should be fairly but strictly enforced.*** Government and representative organisations should state forcefully that such requirements are necessary safeguards of wider public interests and not in any sense inconvenient impositions to be circumvented if possible. Obviously this requires that the obligations be sensible in the first place. But the right course is to ensure this by engaging fully and widely when they are first drawn up, not to go easy on enforcement once they have been adopted.

5.7 ***Land managers should be similarly be encouraged to view the statutory right of responsible public access as part of the bargain between them and the wider population and as an opportunity to forge closer links between town and country*** (and indeed landowning and non-landowning country dwellers) and not as a burden unwillingly borne. Improved communication, leading to enhanced mutual understanding, could pay substantial dividends to all involved.

5.8 ***Cooperation: Greater cooperation between land managers is also well-nigh essential to achieve a wide range of public benefits in the realm of land use,*** from effective sustainable deer management to the creation of habitat networks and worthwhile core path systems. Yet it has proved stubbornly elusive, often deterred by the design of public programmes as well as reluctance on the part of the would-be participants. There is evidence to show that initiatives designed to encourage collaboration in pursuit of public interest objectives can yield significant spin-off benefits by generating a wider willingness to collaborate in pursuit of other common goals. ***More effort should be made to foster and facilitate such cooperation,*** starting with the sharing of less sensitive, non-commercial information.

Pontbren

The Pontbren group consists of ten neighbouring farming families, managing about 1,000ha in north Powys, Wales. All have farmed the land for many generations. The first three came together in 1997 with an eye to improving the management of their limited amount of woodland and extensive network of hedgerows to increase the shelter for their sheep. The enhancements that they undertook soon attracted the interest of the other seven, who joined the group in 2001. They have since established themselves as a legal entity. With some help from the Coed Cymru woodland initiative and funding from LEADER, they set about planning a better future for their holdings with a large scale mapping exercise. They have subsequently attracted both Forestry Commission funding for tree planting and Lottery support for a programme of management for their hedgerows, ponds and wetlands, which they substantially administer themselves. For them, much of the appeal of their approach has lain in the greater control that they feel that it has given them over their own destiny.

Indicative land use planning

5.9 **Purpose:** Turning now to the second issue - of how to develop some kind of indicative land use plan – how might the purpose of the exercise best be defined and explained? In line with the aim of the Land Use Strategy, ***it could be described as making the best use of the land within the area concerned to deliver wider, increased and (crucially) more enduring benefits.*** A helpful point of reference here is the definition of sustainable development and in particular the primacy that this accords to living within environmental limits. This underscores the fact that ***any plan should be aiming not to maximise short-term output but to optimise the long-term flow of benefits.***

5.10 **Process:** What form might the process take? ***The first pre-requisite is that it should be an open and inclusive one.*** To succeed it must combine the bottom-up with the top-down: the detailed knowledge and insights of local people, and especially of those directly involved in managing the land with the perspectives, context and information that can be offered by public bodies with a national remit. ***The explicit aim should, in the first instance, be to arrive at a common understanding of the issues deserving attention.*** Only once this has been achieved can a meaningful effort be made to chart a way forward. Lack of such a shared awareness – of both problems and opportunities – has bedevilled many attempts to make better and more rational use of Scotland’s natural resources. Importantly, too, the emphasis should be at least as much on highlighting the good features of an area – the qualities that make it special – and identifying the opportunities that they represent, as on analysing and tackling alleged problems. ***The spirit of the exercise should be a positive one.***

5.11 What tends to unite people is a shared interest in, and commitment to, a defined and recognisable place. Their individual ambitions may diverge, and even conflict, but rarely will they be totally indifferent to the effect of their actions on the well-being of the place in which they live and the communities of which they form part. ***A focus on a readily identifiable place is likely to provide a good starting-point for the type of dialogue envisaged.***

Loweswater Care

This initiative, which included an inter-disciplinary research project under the Rural Economy and Land Use programme from 2007 to 2010, has run and evolved over some 20 years. It was triggered by concern over the appearance in this famous Lake District waterbody of blue-green algae, encouraged by raised nutrient levels. Local farmers were blamed and a number of them joined forces to try to tackle the issue. Their efforts soon exposed a much wider range of problems – social, economic and environmental – characteristic of remote rural communities. A deep affection for the place itself, and a shared concern for the future of both its beauty and its human community, fuelled a determination on the part of a wide range of individuals and organisations to persist in seeking solutions to some very intractable problems. The commitment shown by the public agencies involved and by the National Trust, as the major landowner in the area, has greatly improved what had previously often been very strained relationships.

5.12 **Planning units:** What should be the planning units? ***The range of possible options – physical, social and administrative – is wide.*** This issue has been much debated and the preferences expressed have often, and not surprisingly, reflected the focus of individuals' interest, as well as their backgrounds and experience. Those schooled in the town and country planning system, who emphasise the interaction with other strategies, plans and systems, and who accord a high priority to democratic accountability, tend to favour local authority boundaries. Those concerned particularly with community involvement understandably incline towards smaller units, perhaps as small as individual towns and villages and their hinterlands. Those with an environmental perspective often look to more bio-geographically defined territories. Increasingly these last appear to see river catchments as the most logical choice, pointing to the fact that these often form natural social, as well as environmental, units and that they are ones in which – as with flood risk - activity geographically far removed from an individual's home or place of work can be shown to impact directly on his or her welfare.

5.13 ***There is no self-evident front runner.*** The choice depends very much on the selection criteria and weightings adopted. Perhaps more important is to recognise that whatever the preferred units, no one of them should be viewed purely in isolation; there will always be cross-boundary effects. ***It is thus vital to set conditions and aspirations within an individual unit within the necessary broader context.*** It should be part of the responsibility of the relevant public body participants to make sure that these considerations and implications are not overlooked, and that plans for individual units fit neatly into a broader picture and are consistent with wider ambitions, whether at a national or a regional scale.

5.14 ***Information sharing:*** Where should the process start? Experience is unequivocal: with ***an attempt to generate a common understanding of the state and potential of the underlying resource:*** the stock of natural and cultural capital. To this end it is essential to share information. Only by doing so will the participants build up a comprehensive picture of the place whose future they are seeking to shape. Moreover, only in this way will they come to understand each others' perspectives and concerns and to build mutual trust and confidence. For both these reasons ***sufficient time must be allowed for this stage in the overall process.***

5.15 In truth many of the processes and interactions relevant to such an understanding are not fully understood – by anybody. But this fact only makes it the more desirable that what limited knowledge exists should be pooled and deployed to best effect. ***A process of shared education is precisely what is needed to break down many of the barriers described in the previous section.***

5.16 ***A judgment is also needed as to the health of the resource:*** in the parlance of the ecosystem approach, is the ecosystem as it is now capable of maintaining the flow of desired goods and services for the foreseeable future? If it is, the task is to see if there are ways of increasing that flow without eroding that fundamental capacity – and indeed of clarifying what must be done to preserve it. If it is not, the challenge is to find how to restore it to a state in which it could once again be relied upon to play its part in supporting sustainable living.

5.17 ***Producing a workable definition of ecosystem health is not easy,*** particularly given the sheer variety of services that we look to our ecosystems to provide. But much has already been done in this field, in particular to draw up ***sets of indicators*** by which it might be assessed. Examples are cited in the SWT Policy Position Paper on Living Landscapes² and those in use in the Australian state of Queensland³. Much of the necessary information should be accessible through SEweb. The public bodies involved in the exercise would have a particular responsibility for helping to prepare this assessment, although there would be others, such as fisheries trusts and local archaeological societies, which would certainly have contributions to make. This might be especially true in relation to the more cultural attributes (such as landscape quality, cultural associations and recreational opportunities) which would be crucial to a properly rounded picture.

5.18 There is a danger that an approach relying heavily on information about the current state of the resource could become too static or even backward-looking in its overall outlook. To be of practical use and to meet the requirements of the Climate Change (Scotland) Act, ***it would be vital to keep firmly in view the likely dynamics of ecosystems as they respond to changing climatic conditions.*** The same applies to human demographics and the impacts that these may have – a matter that is already to some degree addressed through the town and country planning system and on which there is already a fair amount of information available. The sort of responses to climate change that the plans would as a consequence need to embrace include habitat networks and wildlife corridors to enable species to relocate in the face of changing conditions, and floodplain management and urban greening projects designed to mitigate the impacts of more extreme rainfall events and higher overall temperatures.

5.19 ***Relationship with the planning system:*** The need for measures such as these puts under the spotlight the relationship between plans of this kind and the existing town and country planning system. ***The scope of the two systems would be very different, one being***

² Living Landscapes: towards ecosystem-based conservation in Scotland SWT Policy Futures series No 1/2009

³ For further information see http://www.derm.qld.gov.au/environmental_management

<http://www.healthywaterways.org>

concerned largely with built development and the other with rural land use much more generally. In character, too, they diverge, in that the town and country planning system, despite its facilitative intent, contains a much greater element of prescription and control. **But the two would nonetheless be operating in the same broad arena, making it essential that they complemented and did not cut across each other. From that standpoint there would be considerable advantage in the next iteration of the National Planning Framework, which is due for preparation shortly, explicitly recognising and spelling out the relationship.**

5.20 **Leadership:** If plans of the kind envisaged are not to form part of the existing town and country planning system, who should lead their preparation? Their scope is palpably broader than the remit of any existing public body (the nearest parallel is probably the National Park Plans prepared by the National Park Authorities). The need for democratic accountability might point to local authorities. But **the activities to be guided extend far beyond the traditional purview of local government** and the experience with community planning offers little encouragement to think that councils would seize with enthusiasm on the chance to expand their horizons in this way. Moreover, local authorities are often viewed with considerable suspicion in land managing circles, and giving them responsibilities in this area might compound the risk of confusion with the town and country planning system. **The whole-hearted support and active participation of local authorities in the process would, however, be imperative for its success.**

5.21 **The best solution might lie in entrusting the role to a consortium of the public bodies with the most direct stake in land management decisions: SEPA, SNH, FCS and SGRPID.** There is indeed some suggestion of this approach in the Ministerial Foreword to the Land Use Strategy. But these bodies are themselves widely distrusted in the land management community, partly on account of their regulatory responsibilities and partly because of their specific statutory remits. In these circumstances **one possible way forward would be for the bodies concerned to fund the work but to commission suitable independent bodies to act as 'honest brokers'.** The difficulty, inevitably, would be in finding bodies with the capacity and the credentials to perform such a role. The Local Action Groups established under the LEADER programme might be possible candidates, at least in some areas.

5.22 **Incentive regime: For any plan to have purchase - and indeed to persuade land managers and other non-public bodies to participate in the plan-making process - relevant financial and regulatory powers would have to be aligned in support.** Although there are quite a number of funding sources that could potentially be tapped, for the foreseeable future the key instrument is likely to be the Scottish Rural Development Programme (SRDP), along possibly, post 2013, with the proposed greening element of Pillar 1 of the Common Agricultural Policy. That being so, **there is a powerful case for linking the process for establishing land use objectives and priorities closely to that for administering the CAP regime.** Doing so would build upon the work undertaken in the early stages of the RPAC system last time around, which generated considerable enthusiasm across a broad range of stakeholders.

5.23 **This implies maintaining and indeed further strengthening the regional structures and processes for managing future funding.** Given that some form of regional differentiation in

payment rates is going to be necessary following the planned move to area-based Pillar 1 support, regional structures might logically embrace both Pillar 1 and Pillar 2 payments. Such an arrangement would not only avoid the need to operate two differing regionalised regimes but would also make it easier to ensure that any 'greening' measures incorporated in Pillar 1 were deployed in a fashion that complemented the more detailed agri-environment measures within Pillar 2. There would be an expectation that all land managers in receipt of public funds would contribute towards the achievement of public benefit goals, whether simply through the 'greening' component of Pillar 1, and the cross-compliance obligations associated with the Single Farm Payment, or through a combination of these and activity qualifying for RDP support. An element of the latter might come in the form of 'broad and shallow' measures (sometimes characterised as 'Rural Priorities-lite'), which had been identified as particularly appropriate to that region through the planning process.

5.24 In these circumstances what should be the geographical scale of the units to be used for administering the relevant public funds? Clearly it would not be practical to have a multitude of separate local administrative units. Nor is it desirable to have a large number of different area payment rates for Pillar 1. But ***an overall number of units similar to, or not greatly fewer than, those adopted for the current SRDP would seem to offer a reasonable bridge between the identification of objectives and priorities and the requirements of efficient administration.*** It should be possible for the national bodies playing a role in the administration process (SGRPID, FCS, SNH and, it is suggested, SEPA) to participate, along with other more local players, in the individual smaller-scale planning exercises within the region concerned. The task of converting objectives identified through local planning exercises into a coherent set of priorities for the region as a whole would then be one for them, together with regional representatives of the various key sectoral interests.

5.25 ***A decentralised process of this kind would also logically involve the establishment of regional budgets.*** One reason often cited for resisting this is the absence of any self-evident objective basis for allocating the funds. Any pattern of budget allocations adopted would no doubt generate debate and be open to some criticism. But this is surely not sufficient grounds for rejecting an idea which would force those taking part in the process at a regional level to make the necessary choices (doubtless subject to some degree of national scrutiny) about both the priorities to be pursued and the ultimate awarding of support. ***The regional distribution of funds could be determined by reference to a set of relevant objective criteria, supplemented by insights gained through the planning process itself.***

5.26 **Advice and facilitation:** A regime like this would provide land managers with a much clearer steer as to the public benefit activities for which they could expect to be funded, and the reasons for this. They would have an opportunity to help set priorities through the local planning process and, through their representatives, within the regional framework for administering incentives. Moreover, ***the system would provide a firm basis for the kind of enhanced advisory service that has widely been recognised in recent discussions about CAP reform as crucial to ensuring that the taxpayer secures maximum value for money for public investments in land-managing activity.*** The precise form that such a service should take is open for debate but all the bodies participating in the effort should be firmly and formally committed to promote the principles of the Land Use Strategy.

5.27 ***Much of the action identified as desirable is likely to span individual holdings and to demand concerted and complementary activity across them.*** Ideally, such activity would be the subject of single joint applications rather than, as hitherto, several separate ones. Whether that is possible will depend on EU rules. But whatever the detail of the regulations ***such co-ordinated action should be encouraged and facilitated by the design of the programme.***

5.28 ***Past experience very strongly suggests, however, that financial incentives alone will not be sufficient to stimulate well-conceived, co-ordinated applications.*** The job of preparing them is just too complicated and requires a level of collaboration which is seldom spontaneously forthcoming. ***Some active facilitation - to bring the parties together, to clarify the issues and the responses needed, and to help prepare a proposal and application for funding - is likely to be indispensable.*** One option might be to lay the foundations for this facilitation at the stage of plan preparation. It was suggested earlier that the bodies leading the planning process might engage some kind of 'honest broker' to facilitate it. This body (or group of bodies) might be charged not just with preparing the plan but with subsequently helping to implement it, precisely by catalysing and co-ordinating the required action. HLF-funded Landscape Partnerships and the EU LIFE programme already furnish numerous examples of projects and initiatives which have been developed and run in this way; the challenge would be to draw on that experience to ensure a high level of service right across the country.

Farming Connect

Farming Connect is a Welsh Government-led and funded initiative to provide all farmers in Wales with the opportunity of one-to-one support, training and advice. It builds upon the extensive experience gained in Wales through a succession of ambitious agri-environment schemes, which demonstrated the value of close engagement with the farming community. The programme subsidises the preparation of Whole Farm plans and, if so desired, of additional diversification plans. The knowledge transfer component of the programme proactively disseminates key messages about the Welsh Government's strategic aims and goals, as well as information on leading industry research and innovation. It is delivered through a network of regionally based staff, who are expected to know their area intimately. These include facilitators who organise discussion group meetings, co-ordinators who market the service, and leaders who recruit and organise local groups. The many techniques employed also include a knowledge needs questionnaire, 30 demonstration farms, thematic workshops, study tours and one-off events.

5.29 ***Timing: A process such as this would have to be cyclical.*** Ideally it might be tied into a relevant related cycle. Unfortunately there are several possibilities. One option is the river basin planning cycle required under the Water Framework Directive. This has the merit of already being under way and relatively well-understood, as well as of operating on a catchment scale. Its principal drawback is that it has a narrower focus than the exercise envisaged here and could bias it towards a particular set of issues.

5.30 ***Another approach, which would have the decided merit of tying the process of plan-making into its main delivery mechanism, would be to align the cycle with the CAP cycle.*** The time-period of these (hitherto usually seven years) seems appropriate, being long enough to allow reasonable time for both planning and implementation, and indeed the

monitoring and review which would also need to be built into the regime. A possible disadvantage is that this cycle would be out of step with both the five-yearly one set for the review of the Land Use Strategy and the Parliamentary cycle which dictates the refreshing of the National Planning Framework. But neither of these drawbacks should be seen as fatal; the reality is that ***it is never going to be possible to synchronise all the activities which in an ideal world might proceed in parallel.***

5.31 A system on the lines described above would, despite any discrepancies in timing, reflect the convergence between the thinking in the Land Use Strategy and what is emerging from a range of other strategies and processes designed to guide activities such as forestry, water and flood risk management, biodiversity conservation and wind energy developments. Lessons drawn from experience with the current SRDP programme point in a similar direction. Although quite resource-intensive, ***a regime on these lines would help to extract maximum value from limited public funds and have the great advantage of helping to tackle all the issues addressed by the various initiatives in one go*** – exactly as the concept of integrated land use demands. It ought therefore to be possible to convince the many organisations and individuals whose participation would be either essential or desirable that it was worth their while to engage. Indeed, there is a good chance that the process would rekindle the enthusiasm for some forward-looking planning and prioritisation that was evident in the early stages of the current SRDP round.

5.32 ***Coverage: Both the inherent logic of the approach, and the scale of benefits potentially on offer, are such that there is a strong justification for rolling it out across Scotland straight away.*** This would tie in with planning for the CAP regime that will operate from 2014 onwards. It would also permit a start to be made on implementing the idea of a National Ecological Network, endorsed in the current National Planning Framework.

5.33 ***Selective option:*** If, despite these major advantages, this timescale were judged too ambitious, ***it would be possible to initiate a process on these lines more selectively.*** Exercises could be undertaken in specific areas which had either been identified as priorities through some objective process, such as SEPA's priority catchments, or where there was a local appetite for such an initiative. ***It might be feasible to stimulate such interest by establishing some form of challenge fund,*** as was very successfully done in England to elicit proposals for National Improvement Areas. This elicited over seventy applications, some of them so strongly supported that projects are being implemented even without the benefit of challenge funding.

5.34 ***There are some initiatives of broadly this kind already under way in Scotland,*** for example that in the proposed Galloway and South Ayrshire Biosphere Reserve. It will be important to keep an eye on them and to monitor their results to see what lessons can be learned for wider application. If some Government money could be made available in the short term, it might usefully be deployed to give them a boost. But ***ideally they should be used to prepare the ground for country-wide implementation of a regime on the lines described above in preparation for the next round of the SRDP and the next cycle of river basin planning.***

6. Why integrated land use is worth the effort

6.1 The proposals in this paper may strike some people as overly-ambitious, especially at a time of diminishing public resources. Certainly it would take a good deal of effort and commitment – from public, representative and voluntary bodies alike – to establish a regime on the lines envisaged. But ***the arguments in favour are compelling. First, constrained public budgets make it all the more important to secure maximum value for every pound spent.*** Processes that can help to ensure this should be especially prized.

6.2 ***Second, work is already in hand in this broad arena,*** whether through countrywide processes like river basin planning and preparations for the next SRDP, or more focussed initiatives, such as the Central Scotland Green Network. ***Creating a common framework within which all these efforts could be aligned should again make for greater efficiency and minimise the risk of different strands of public policy pulling against one another.*** Importantly, it should, if properly explained, help to assure the wider public that the various arms of government were working together and engaging with local communities in an effort to develop a common vision for the future use of land.

6.3 ***The third, and perhaps strongest, argument is that generating a sense of common purpose and a determination to achieve a set of agreed aims is the very best way to energise and boost the morale of any community.*** In relation to the profound and far-reaching issues of how a nation uses its land, Scotland already has an estimable record of trail-blazing, from Patrick Geddes's pioneering thinking in the field of town and country planning to access legislation which is frequently held up as an example to the world. The Land Use Strategy extends this proud tradition. By building on its principles in the sort of way suggested in this paper, ***Scotland can make sure that it remains at the forefront of a global community grappling with the daunting challenge of making the very best use of the planet's limited resources.***

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LINK is supported by Membership Subscriptions and by Grants from Scottish Natural Heritage, Scottish Government and the Esmée Fairbairn Foundation.