Campaign to Protect Rural England
Standing up for your countryside

LANDLINES:

why we need a strategic approach to land

Acknowledgements

Many people have helped with the preparation of this pamphlet. I would especially like to thank all those who have provided a written contribution and, where appropriate, the organisations they represent. Special thanks are also due to Belinda Gordon, Jane Seymour, James Bartholomeusz and colleagues at CPRE. Numerous people have assisted by participating in informal, semi-structured interviews. For these, thanks are due in particular to: Sue Armstrong-Brown, former Policy Director of Green Alliance; Trudi Elliott, Chief Executive of the Royal Town Planning Institute; Hugh Ellis, Interim Chief Executive of the Town and Country Planning Association: Richard Hebditch, Director of External Affairs at the National Trust; Duncan McCann, Researcher at the New Economics Foun-dation; Hugh Raven, Director of the Ardtornish Estate; Dame Fiona Reynolds, Master of Emmanuel College, Cambridge; Professor Mark Tewdr-Jones, Chair of Town Planning at the University of Newcastle; Sir Graham Wynne, former Chief Executive of the Royal Society for the Protection of Birds; and a number of staff members at the UK Committee on Climate Change. While I am grateful for their help with the research, it should not be assumed that any of the contributors or interviewees agree with the propositions advanced in this report.

Neil Sinden, March 2017

Contents

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Back to the land question?

Foreword by SHAUN SPIERS, Chief Executive of the Campaign to Protect Rural England

Why are we not more interested in the land? Newspapers carry stories about where to put new houses, roads and runways; about flooding or hosepipe bans (sometimes at the same time); about the cost of food, water and energy. Climate change is acknowledged, but usually as a distant threat, rather than as something already threatening homes and our most productive farmland.

But all these issues come back to the question of how we use land, and we seldom discuss that. Even in 'land use planning', we muddle through. As Corinne Swain notes in her essay in this collection, there are 'significant risks of flooding, water shortages and other environmental constraints in the very parts of the country subject to the greatest housing growth pressures' – those where we are now planning to build the most houses.

In the early 20th century, the 'Land Question' (then largely a question of land ownership) dominated British politics. Now it is almost forgotten. It is the contention of this pamphlet that we should start to ask it again, to think seriously about a strategic, long-term approach to land use to help address the challenges the country faces. Thinking seriously about how we get the most from our land will help produce better outcomes not just for the environment, but for society and the economy.

The pamphlet has thought-provoking contributions from a number of individuals: our thanks to all of them. We hope it will provide the basis for a broad coalition to press for a new land use settlement for the 21st century.

Such a strategy need not amount to a national spatial plan, though that has some supporters. But it should at least enable us to ask the right questions. It should advance the Government's valuable work in developing a 25 year plan for the environment, but go further by encompassing all land uses. It is a sad fact that a 25 year plan for the environment is unlikely to hold much sway with the Treasury, even though Treasury officials and Ministers occupy the same environment as the rest of us.

Neil Sinden's introductory essay proposes a Land Use Commission to develop the strategy. Why not a Royal Commission? The Prime Minister has shown that she is willing to dust down some good ideas from earlier times, and she has spoken of moving beyond 'laissez-faire liberalism that leaves people to get by on their own'. Leaving land use to take its course with only the haphazard and poorly integrated interventions now in place will have an ever more damaging effect as our population grows and we cope with the multiple pressures of globalisation, technological change and climate change.

'We should think seriously about a strategic, long-term approach to land use to help address the challenges the country faces.'

Land use: an overview

NEIL SINDEN sets out the case for a new approach to land

Why does land use matter now?

Land underpins our existence – yet, as a country, we fail to recognise the importance of land use to our wellbeing. We continually demand more from land in terms of food and fibre, to meet our recreational needs, to accommodate the need for new infrastructure, and to make us more resilient in the face of a changing climate. Besides this, England has recently become only second to Malta as the most densely populated country in Europe. With our population predicted to grow to 60 million during the next decade, the challenges associated with providing homes for people on our limited land resource will only become more intense. If we are to rise to these challenges it is time to take a clear-eyed look at the way we use land in this small island.

Our apparently sophisticated planning system might suggest this is not something we should be too concerned about. Surely with the National Planning Policy Framework, local and neighbourhood plans, we can guide development and manage land use effectively? But there is growing evidence that our fragmented approach to land, and lack of control over non-urban land uses, means we are failing to deal effectively with the conflicts and complexities of the way we use it, and its qualities. The headlines are not good. Biodiversity is in serious decline and climate change is raising new challenges for rural and urban land management. The global economic crisis in 2008 and its continuing impact has reasserted pressure for a national focus on economic growth above all other considerations. The notion that there is a wider public interest, not taken care of by the market, in the development and use of land is widely ignored. At the same time there are growing doubts about the capacity of local authorities to manage change of land use in ways that command popular support. It is time to address the fundamental question of how we can best use our limited land resource.

Shelter is one of the most basic human needs. So it is right that the debate over land use should start with how we can use land more effectively to provide housing for people and associated transport infrastructure. The production of food and the provision of other natural resources, primarily timber and water and, increasingly, energy, are among the other fundamental requirements we have from land. But with food imports now accounting for almost half of our consumption, intensive agriculture destroying our wildlife and the expansion of energy crops, how important is it to maximise the capacity to produce food domestically? Brexit now presents an opportunity to rethink agricultural policy and how we use agricultural land (see Baroness Parminter, page 28).

The need to decarbonise our energy supply is also placing new pressures on the land and the character of the landscape, while pressure for more energy is growing. The management of water on and under land has become a pressing issue in many areas, with more frequent flooding arising from the increasingly unpredictable weather patterns associated with climate change. As a result of all these factors, river catchment management plans, resilient infrastructure and sensitive farming practices have taken on a greater significance (see Baroness Young, page 24).

Along with the growing demands for natural resources, there is increasing interest in the quality of land: its character, wildlife, tranquillity

and beauty, and the importance of these to quality of life. Land use has a direct impact on health and wellbeing through providing opportunities for recreation and more healthy lifestyles. Access to open space, especially where it helps us connect with nature, plays a vital part in that. The dramatic decline in biodiversity in recent years has been alarming and actions to address it partial and slow. The aesthetic appreciation of the landscape, its character and beauty, underpinned the emergence of the environmental movement in the late 19th century; now local distinctiveness, a manifestation of the richness and complexities of land use and the particular qualities of 'place', has become a matter of growing public concern.

Land as a primary natural resource has an immeasurable impact both on our environment and economy, and on the quality of our lives. As a nation, we are simply not giving enough consideration to the choices we need to make in order to secure the best use of land now and in the future. This is leading to unnecessary public and private expense, environmental degradation and declining quality of life for many communities. All these issues combine to make a land use debate a priority for us right now.

Land use policy: a brief history

Land ownership and use has been a matter of interest to the powers-that-be for centuries. In 1086, the Domesday Book, the first comprehensive survey of land in England, was prepared primarily to enable taxes to be collected to fund military activities. It recorded who owned land, the extent of their landholdings and an assessment of land use in terms of the area of woodland, meadow, farmed land and other natural resources.

The focus on land in the medieval period was often on the extent of associated rights enjoyed by different groups. The Crown owned all land and gave usage rights to lords of the manor who administered a complex arrangement of commoners' rights that governed how land was used and by whom, primarily for the purpose of providing food and wood. The enclosure of common land, which took place in waves between the 16th and 18th centuries, was fuelled by changing agricultural practices, including the creation of large expanses of land for sheep grazing, and the consolidation, draining and fencing of land to allow more intensive forms of agriculture under private ownership. As society restructured, so did land use, and focus switched from land as a public good.

With the major expansion of urban areas and associated infrastructure in the 19th century, concerns over land use extended beyond questions of who owned and had access to land. The controversy over the development of a reservoir at Thirlmere in the Lake District in the 1870s to supply water to the growing conurbation of Manchester is one of the earliest cases in the modern era of conflict over land use. The development of the rail and road network led to similar tensions and gave rise to the notion that there was a public interest in the use of land, wider than the interests of individual private landowners.

Ribbon development, characterised by lines of houses along arterial roads, accompanied the rise of car use in the early 20th century. Along with urban sprawl, caused by the rapid expansion of towns and cities, this inspired the first modern legislation to control the development of housing. After concern over timber shortages following the First World War led to the establishment of the Forestry Commission in 1919, it didn't take long for controversy to arise over its policy of planting conifers in upland areas and in place of native broadleaf woodland.

These early conflicts were stimulated by public concern over the aesthetic impact of development and changing land use. CPRE pioneered the development of public policy to address these concerns, which shaped post-war planning legislation in the form of the 1947 Town and Country Planning Act. This nationalised the right to develop land, while the National Parks and Access to the Countryside Act 1949 put in place the legal framework for designating and protecting undeveloped, mainly upland, areas of high landscape quality.

'I think having land and not ruining it is the most beautiful art that anybody could ever want.'

Andy Warhol

These visionary laws were informed by the work of experts commissioned by Churchill's Government during the Second World War to examine different aspects of land use. Sir Anderson Barlow, Mr Justice Utthwat, and Lord Justice Scott all oversaw major reports that fed into a seminal White Paper, The Control of Land Use, published in 1944. The White Paper talked confidently of the need to secure the 'best use of land in the national interest', adding:

'Provision for the right use of land, in accordance with a considered policy, is an essential requirement of the Government's programme of post-war reconstruction.'

With bold statements that were to form the bedrock of the post-war planning system, it went on:

'It is not proposed that a single master plan be prepared by the Government and imposed on the country, nor that the existing pattern of land ownership and land use be swept away. The Government believe that a national and positive policy for the right use of land can best be evolved by a continuous process of collaboration between local and central authorities and the individual citizen.'

The Ministry of Housing and Local Government (initially called the Ministry of Local Government and Planning) was formed in 1951. It retained responsibility for the planning system until 1970, when the Department for the Environment was established to combine responsibility for planning, housing, transport, public buildings and environmental protection. The integration of environment and planning policy within Government continued into the 1990s and was a factor in the establishment of the Urban Task Force in 1998, chaired by the architect Richard (now Lord) Rogers, which explored how the quality of urban areas could be improved through planning and other policies. Land use planning is now the responsibility of the Department for Communities and Local Government.

For much of the 20th century the Government's approach to rural land remained the responsibility primarily of the Ministry of Agriculture, Fisheries and Food, the first incarnation of which was established in 1919, with responsibility for food added in 1955. The primacy of agricultural production was the key driver of policy after the Second World War, with great importance attached to the protection of high quality agricultural land, as defined by official agricultural land classification maps. Agricultural intensification became a significant land use issue in the 1970s, as it was identified with the loss of valuable wildlife habitats and landscape features. More recently, there has been a decisive shift away from subsidies for food production towards payments based on land area, and support for environmental farming schemes, under the Common Agricultural Policy of the European Union, which has governed farming policy in England since 1973. In 2000, a European Rural Development Policy began to provide support for sustainable land management to help address climate change and improve soil and water quality.

A new Department for Environment, Food and Rural Affairs was created in the UK in 2001, linking responsibility for environmental policy to the rural agenda. Crucially, this broke the link between planning and environment in terms of Government structures that had existed since the creation of the Department for the Environment. With the growing challenges posed by climate change, a Department for Energy and Climate Change was established in 2008, further fragmenting responsibility for environmental policy across Government, although DECC's responsibilities have recently been subsumed in a new Department of Business, Energy and Industrial Strategy (see Lord Deben, page 18 for a discussion about the future of land use management by Government).

Land use: some facts and figures

Before exploring the benefits of a more strategic approach to land, it is worth looking at how it is currently used. There are two aspects that warrant consideration: the pattern of land use across the country and how we control changes in land use and management.

Comprehensive statistics on land use in England were first collected in the 1930s by L. Dudley Stamp who instigated the first Land Utilisation Survey of Britain with a focus on monitoring the loss of agricultural land to urban development. Land use change statistics have since become highly refined and the Ordnance Survey has developed a methodology for collecting digital data on land use change. In the 1990s, CPRE questioned the robustness of different methods of categorising and measuring land use change, arguing that the loss of land to development had been underestimated in official statistics. Today there is less debate over the accuracy of the data and greater discussion of how the data should be interpreted.

England has a land area of a little more than 13 million hectares; with rising sea levels and coastal erosion, this area is set to decline marginally over coming years. Almost 11% of this area, about 1.4 million hectares, is classed as developed land, that is, land that has been built on at some point or which is part of the urban fabric, including urban greenspace, such as parks and gardens. But land use impact extends beyond the immediate boundaries of the land concerned. CPRE's 'intrusion' maps have shown, for example, that nearly half of England is indirectly impacted by urban development in terms of visual intrusion – and that affects its character.

The geology that underpins land use is also crucial. The distinctive character of different parts of the English countryside has been captured in the concept of National Character Areas. This has been developed by Natural England which has identified 159 such areas, defined by their landscape characteristics of geology and associated biodiversity (see Merrick Denton-Thompson for more detail, page 30). This approach allows consideration of the qualities of the land which give rise to its physical character and often, in turn, to its use.

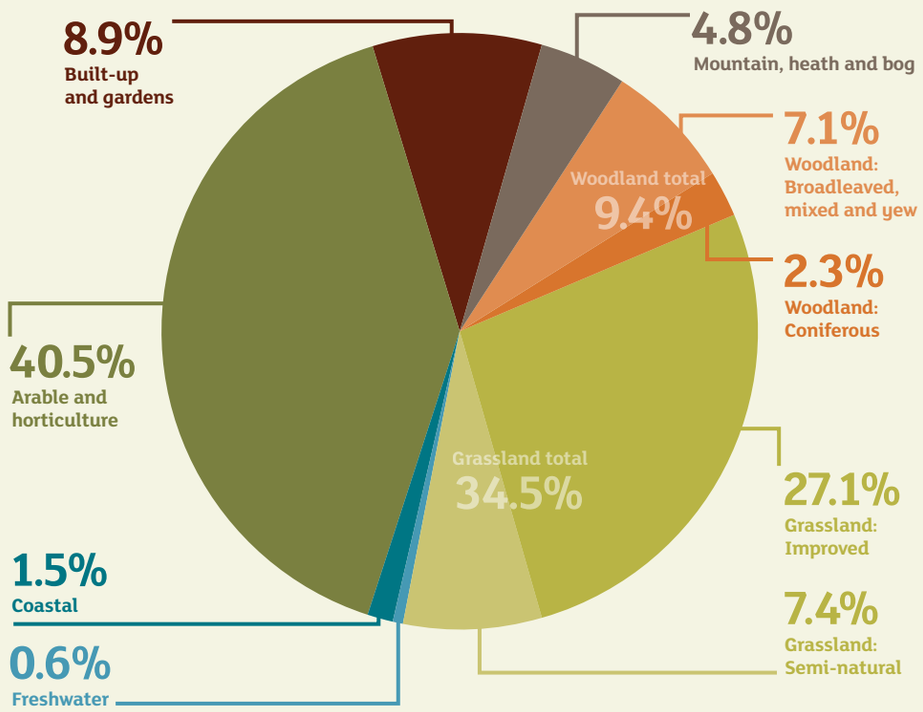
Designated Green Belt accounts for about 12.5% of the country and exists around 14 urban areas, including most major towns and cities. While the key purpose of Green Belt policy is to prevent urban sprawl, a small proportion of Green Belt comprises developed land as the designation 'washes over' smaller urban areas. Areas of high landscape value are designated as National Parks or Areas of Outstanding Natural Beauty. There are 10 National Parks that are recognised as important for outdoor recreation as well as for their landscape quality, with the most recent, the South Downs, being designated in 2010. There are 33 AONBs, which are considered to be of equivalent landscape value to National Parks, and, together with SSSIs, which overlap to an extent with other designations, National Parks and AONBs cover around 40% (5.3 million hectares) of the total land area of England.

In recent years there have been moves to measure 'land cover' – the physical nature of surface of the earth, as distinct from 'land use' – the purpose to which land is put. This can be taken as an indication of the way in which land is managed. The UK Countryside Survey, carried out by the Centre for Ecology and Hydrology between 1998 and 2007, has provided a reasonably consistent measurement of land cover across much of the country, excluding predominantly urban areas (see Figure 1). In broad terms, this showed there had been an increase in pasture and semi-natural grassland in England of about 8% over that time, and a corresponding decline in enclosed farmland, while broadleaved and mixed forest had expanded by more than 5%. The expansion of woodland is set to continue with the Government's target of 12% woodland cover in England by 2060, from 10% in 2013. This data from the last Countryside Survey needs updating, however, so a new survey is currently being planned.

While changes in rural land management have been influenced by incentive-based rural payments under the CAP, there are few regulatory controls over non-urban changes in land cover. This means that significant changes in land cover can be undertaken by private landowners, so can be difficult to predict or control effectively.

Land use change involving built development, as defined under planning legislation, however, is subject to controls exercised by local planning authorities. Recent deregulatory measures have reduced the scope of planning controls and introduced a more pro-development policy framework. Research by CPRE has shown that this has reduced the ability of local authorities to prioritise the reuse of previously developed, or brownfield, land and increased the rate of development in the Green Belt.

Figure 1 | Land use statistics for England



Why we need a new approach

One approach would be to develop a land use strategy, but we need to be clear about its purpose. This could be expressed in different ways and at different geographic levels. In the broadest sense, a land use strategy might be described as an integrated approach to optimising the use of land to maximise long-term social, economic and environmental benefits.

Pressures on land use arise for various reasons. The most obvious relate to the impact of demographic change, particularly projected population growth. Before the EU referendum, projections from the Office of National Statistics suggested that the population of England will grow from about the 55 million it is now to 63.3 million by 2039. It is unclear how this might be affected by Brexit but that represents a growth rate of 7.5%, much higher than in other parts of the UK. During that period, the structure of the population will change with a higher proportion of older people, and a growing number of households, and changes in the geographic distribution due to migration between regions and localities.

In Europe, only Malta has a higher population density than England and projections suggest that, by 2047, England will have the largest population. This growth in population does not correlate with a simple need for new housing – the rate of formation of new households and the extent of existing housing stock are important factors. However, it remains the case that housing development to accommodate a growing number of new households is the most significant cause of loss of greenfield land, with more than 2,000 hectares being developed each year. And with a declining proportion of new housing being built on brownfield land, this figure is likely to grow. An expanding population will also add to pressure on infrastructure, increase demand for natural resources and recreational opportunities.

The migration of people between regions within England is an important factor in changing patterns of development, creating land use pressures. A feature of recent years has been the growing trend of migration towards the South East from other regions. This has added to pressure on greenfield sites, including designated Green Belt land. More balanced regional development across the country would take pressure off the south and encourage investment in regeneration in the north. Devolution of powers to new 'city region' authorities should help address this challenge.

An effective land use strategy should prioritise the reuse of suitable brownfield land, in recognition of the multiple functions fulfilled by undeveloped or greenfield land, particularly in terms of ecosystem services. Farming and the provision of food and fibre remain core purposes of much rural land and these will remain crucial, especially with the increased awareness of the importance of food security in an age of climate change. At the same time, consumers are showing a growing interest in matters of food quality and provenance. But there is also an expanding role for farming to provide raw materials for industrial activities, including biofuels and medicines. In 2006, a DEFRA working group produced 'energy crop opportunity' maps to provide guidance on suitable locations for energy crop plantations, taking account of data on likely yields, designated areas and landscape character.

'When we see land as a community to which we belong, we may begin to use it with love and respect.'

Aldo Leopold

The pressures on land arising from climate change are also central to the case for a more strategic approach to land use. The associated conflicts are most apparent in the way many of our upland areas are managed, where burning heather prevents the regeneration of peat which plays a vital role in carbon sequestration. Moves to decarbonise our energy supply as part of a mitigation strategy to address causes of climate change have, in recent years, led to a proliferation of new energy infrastructure, which has not been planned strategically to minimise unnecessary land use conflicts.

Adapting land use in response to climate change events is becoming an urgent priority, too. The increasing frequency of extreme weather, coupled with underlying trends in the climate, have caused major flooding in a growing number of locations. Coastal erosion, linked with rising sea levels, appears to be accelerating in some areas according to Environment Agency mapping. In 2013, the Government issued a National Adaptation Programme (NAP) in line with section 58 of the Climate Change Act 2008. This was a response to the Climate Change Risk Assessment (CCRA) produced in 2012 that identified 100 associated risks for review. The plan lists 31 objectives for adapting to climate change covering the built environment, infrastructure, health and agriculture, along with actions to address them. This includes an objective for spatial planning:

'To provide a clear local planning framework to enable all participants in the planning system to deliver sustainable new development, including infrastructure that minimises vulnerability and provides resilience to the impacts of climate change.'

Local plans are expected to take account of Strategic Flood Risk Assessments in the light of climate change but it isn't obvious from the NAP that these have been effective in guiding housing development. Last year's Flood Resilience Review refers to the commitment to a review of planning policies concerning sustainable drainage in relation to the development of land, but there is little evidence overall that the spatial planning of new infrastructure is taking adequate account of climate risks.

The Adaptation Sub-Committee of the Committee on Climate Change is currently preparing an evidence report for the second CCRA which is due in 2017. Fresh research on flood risk and water availability, along with the impact of climate change on water quality, soil carbon and wildlife, is being carried out to inform this work. There is no doubt that adaptation to climate change should be central to any new land use strategy.

All of these pressures mean land capability and soil quality become increasingly critical issues. There is a growing awareness that insufficient attention is being paid to the significance of maintenance and improvement of soil structure and quality as a basis for sustainable agriculture. The agricultural land classification surveys that began shortly after the end of the Second World War have been the foundation for the protection from development of the 'best and most versatile' agricultural land through the planning system until quite recently. These surveys were quite 'broad brush' and based on a narrow assessment of soil qualities. A new approach to understanding and safeguarding soil quality, taking account of the impacts of climate change, will need to be core part of a future land use strategy. It should also underpin Government plans for a 25 year plan for food and farming. Above all, an integrated approach to rural land management is urgently needed to address the dramatic and accelerating decline in biodiversity that has occurred over the past half century. Discussion of sensitive rewilding and where it would be most appropriate could be considered as part of the development of any land use strategy (see Helen Meech on rewilding, page 35).

There are lessons to learn for a more strategic approach to rural land management from various area-based initiatives. National Park Authorities could be seen as exemplars in this respect with their dual responsibilities for preparing land management and planning strategies. The new Partnership Plan for the New Forest National Park, produced in November 2015, shows the

potential of NPAs to chart a more strategic approach to land. Recent cuts, however, appear to be undermining their ability to pursue such an approach. The new National Forest is an impressive example of what can be achieved with a positive vision for improving land management through tree planting, land use planning and associated delivery tools (see John Everitt and Adrian Phillips, page 33). There are also lessons to learn from the strategic approach to regeneration of the Thames Gateway, and the associated Olympic Park (although this is clearly a unique case). The campaign for London to become a National Park City offers an opportunity to think afresh about land use in the capital (see Sir Terry Farrell, page 37).

Barriers to a better way forward

Despite a compelling case for a more strategic approach to land use, the Government approach is piecemeal. What then are the barriers to the adoption of a better approach to land use?

Undoubtedly, the challenge posed by the global financial crisis triggered in 2008 has become the overwhelming focus of public policy in recent years. There is also the more recent concern that negotiating the terms of Brexit will be a major drain on Government resources, leaving little capacity for innovation. Alongside the need to stabilise the economic system, we have seen a growing importance attached by the UK Government to reducing regulation of the market. This deregulatory drive has had a significant impact not just on the system of land use planning, but has also called into question its impact on economic competitiveness.

The introduction of the National Planning Policy Framework in 2012 symbolised these pressures. The vigorous public campaign fought by CPRE and others to safeguard key tenets of national planning policy, notably strong policies to promote brownfield regeneration and recognition of the wider value of the countryside, was only partially successful. Perhaps the biggest casualty, however, was a loss of public confidence in the planning system to deliver rational decisions. Continual tinkering with the details of planning control fails to recognise that core components of the system require a fundamental overhaul.

This loss of public confidence has been amplified by the effect of public sector cuts on the capacity of local authority planning departments to meet their legal obligations. These authorities are also, in most cases, too small to be capable of addressing land use considerations at a sufficiently large geographical scale. Progress in preparing up-to-date local plans has been notoriously slow, even as their scope and level of detail has reduced. And while the speed of decision-making on planning applications may have increased, there is mounting concern that this has often come at the expense of good, evidence-based decisions. The capacity of local planning authorities to fulfill their responsibilities is now seriously questioned and needs to be resolved. Potential solutions to these and other challenges facing the planning system will no doubt emerge from the review recently launched by the Town and Country Planning Association (TCPA), under the leadership of former Planning Minister Nick Raynsford, which aims to set out a new vision for planning in England for 2020 and beyond.

But there are limits to the extent to which land use planning can address the challenges concerning rural land management. The incentives-based approach to steering management decisions by landowners often runs alongside the regulatory controls exercised over built development. A more integrated approach to the land requires a shift from the policy silos that we have become used to.

Government structures reflect the fragmented way in which policies affecting land use are developed within Whitehall, which limits the ability of our political system to define the long-term public interest in which land is used. We are now a long way from the consensus that prevailed among national politicians when the Town and Country Planning Act completed its passage through Parliament in 1947 but, arguably, the challenges we currently face due to climate change and the pressures these place on public investment and security are taking us through a time of political upheaval comparable to that preceding the postwar consensus.

Recent work on land use

Despite the barriers discussed in the previous section, there has been a marked shift in the Government approach to land use in recent years. In 2007, while preparing a vision for the countryside in 2026, CPRE hosted a major speech by the Secretary of State for the Environment, David Miliband. Entitled 'A land fit for the future?' he explored how we use and manage land and how we might do it better, proposing the idea of 'Turquoise Belt' as a way of dealing with the interface between land and water. Miliband's speech led to a 'Land Use Futures' foresight project by the Government Office for Science.

The Land Use Futures project lasted two years and concluded with a report entitled 'Land Use Futures: making the most of land in the 21st century' published shortly before the General Election in 2010. The executive summary noted:

'Land and its many uses provide the bedrock of the country and the foundation of our wellbeing, prosperity and national identity. The pervasive effects of change in land use and management underline the need to take the broadest possible perspective in developing future policies and strategies on land. While much has been achieved over recent decades, there is a strong case to do more.' It concluded that: *'a critical choice for Governments is whether to address the future challenges in an incremental and piecemeal fashion, or whether to aim for a more coherent and consistent approach to managing land use – or indeed some combination of the two'.*

Shortly before the conclusion of the Land Use Futures project the Government launched a review of wildlife sites in England and the connections between them. Chaired by Sir John Lawton, the review group published its report 'Making Space for Nature' in September 2010. The review examined wildlife sites and considered *'whether they are capable of responding and adapting to the growing challenges of climate change and other demands on our land.'*

Launching the report, Sir John Lawton said:

'There is compelling evidence that England's collection of wildlife sites are generally too small and too isolated, leading to declines in many of England's characteristic species. With climate change, the situation is likely to get worse. This is bad news for wildlife but also bad news for us, because the damage to nature also means our natural environment is less able to provide the many services upon which we depend. We need more space for nature.'

The Government responded to the report in a Natural Environment White Paper launched in 2011. This set out proposals for Nature Improvement Areas, Local Nature Partnerships and a new Natural Capital Committee (NCC). Set up a year later, the NCC is tasked with reporting to the Cabinet's Economic Affairs Committee on 'how to ensure England's natural wealth is managed efficiently and sustainably, thereby unlocking opportunities for sustained prosperity and wellbeing'. In a recent report, the NCC calls for 'a strategy to protect and improve natural capital', including by 'incorporating natural capital into the national accounts by 2020'. While the links between natural capital and land use are not made explicit, as illustrated by the Great Fen Habitat Restoration Project there is clearly a

'All of nature is community wealth, including – and especially – land.'

Martin Adams

strong relationship as the way in which land is used or managed can have a significant effect on its value as natural capital (see Georgina Mace and Ian Bateman on valuing land use, page 26).

The concept of natural capital is closely related to that of ecosystems services. The UK National Ecosystems Assessment (NEA) was commissioned in 2011, inspired by the UN's Global Millennium Ecosystem Assessment of 2005. The UN describes the ecosystem approach as 'a strategy for the integrated management of land, water and living resources that promotes sustainable conservation and use'. Ecosystem services are 'the benefits provided by ecosystems that contribute to making human life both possible and worth living' and are usually grouped under four main headings:

- provisioning services – food, fibre, genetic resources
- regulating services – climate regulation, pollination, disease control
- supporting services – water cycles, soil formation
- cultural services – recreation, heritage, aesthetic experience

Building on the ecosystems services approach, DEFRA has committed to producing a 25 year plan for the environment. The 2015-2020 departmental plan states that one of the objectives of the plan is to: *'develop the structures and tools to draw together economic, social and scientific evidence and provide practical approaches to enable people to value nature systematically and fully when they are making decisions on the ground and to ensure we get the greatest value from both public and private investment.'*

'But while nature has considerable resilience, there is a limit to how far that resilience can be stretched.'

Mark Carwardine

'Pioneer' projects in Cumbria, Greater Manchester, North Devon and East Anglia are intended to help identify innovative solutions and good practice in different contexts: urban, landscape, catchment and marine. DEFRA has also signalled the growing importance of river catchment planning in guiding decisions affecting land management and land use in its Flood Resilience Review published in September 2016. The 25 year plan should therefore complement the work of the Adaptation Sub-Committee of the Committee on Climate Change, set up as an independent statutory body under the 2008 Climate Change Act to advise the Government on action to reduce greenhouse gas emission and prepare for climate change. The Committee on Climate Change should have a significant part to play in advising on land use and management in future.

Climate change is also an important driver behind the National Infrastructure Assessment being carried out by the National Infrastructure Commission. The Commission, established in 2015, is examining how the provision of energy, transport, digital communications, water and waste infrastructure can better support 'sustainable economic growth across all the regions of the UK' and improve competitiveness and quality of life. While not an explicit part of its remit, the Commission's advice to Government will have a significant impact on future land use (see Andrew Wescott on the NIC, page 22).

The Scottish Government has gone a long way towards adopting a more strategic approach to land use as recommended in the Land Use Futures report. The Climate Change (Scotland) Act 2009 requires the Government there to publish a Land Use Strategy report 'to help us think more strategically about the potential of our land and the ways in which land is used now and into the future'. The second Scottish Land Use Strategy, covering the period 2016-2021, was produced in March 2016, taking account of two regional land use pilot projects in the Scottish Borders and Aberdeenshire. It retains the original vision to *'fully recognise, understand and value the importance of our land resources, and where our plans and decisions about land use deliver improved and enduring benefits, enhancing the wellbeing of our nation'*. It also sticks to the three key objectives of:

- land-based businesses working with nature to contribute more to Scotland's prosperity
- responsible stewardship of Scotland's natural resources delivering more benefits to Scotland's people
- urban and rural communities better connected to the land, with more people enjoying the land and positively influencing land use

The Scottish strategy sets out a programme of action for the next five years under three priority themes:

- policy context – this includes developing approaches to natural resource management by promoting an ecosystems services approach to natural capital, aligning sectoral strategies, such as for forestry, and planning policies with the land use strategy
- informed decision-making – including by promoting improved access to land use data, encouraging land use partnerships, and exploring further the benefits of regional land use frameworks for rural areas
- applying the principles (see annex) – in agriculture by promoting climate-friendly farming and crofting, developing the targeting agri-environment funding, establishing an urban land use pilot and developing a vision for the uplands

Both the Royal Town Planning Institute and Town and Country Planning Association have in recent years called for a national spatial strategy, or framework, to address regional economic disparities and promote a vision for a 'pattern of long-term development'. This was echoed in 2002 in a seminal report by the Royal Commission on Environmental Pollution which proposed 'integrated spatial strategies' ... 'covering all aspects of sustainable development; and ensuring that such strategies cover all forms of land use, in particular agriculture and forestry as the largest uses'.

The case for such a strategy was strengthened with the advent of Regional Spatial Strategies in England, which evolved from Regional Planning Guidance in the mid-1990s, but were abolished by the incoming Government in 2010 (see Corinne Swain on spatial planning, page 20). The coordination of land use planning with infrastructure provision would be an important component of a national spatial strategy, according to the RTPI. For example, the development of HS2 is arguably hampered by the lack of a spatial vision for the long-term development of northern regions. A clearer spatial strategy would assist also the work of the National Infrastructure Commission.

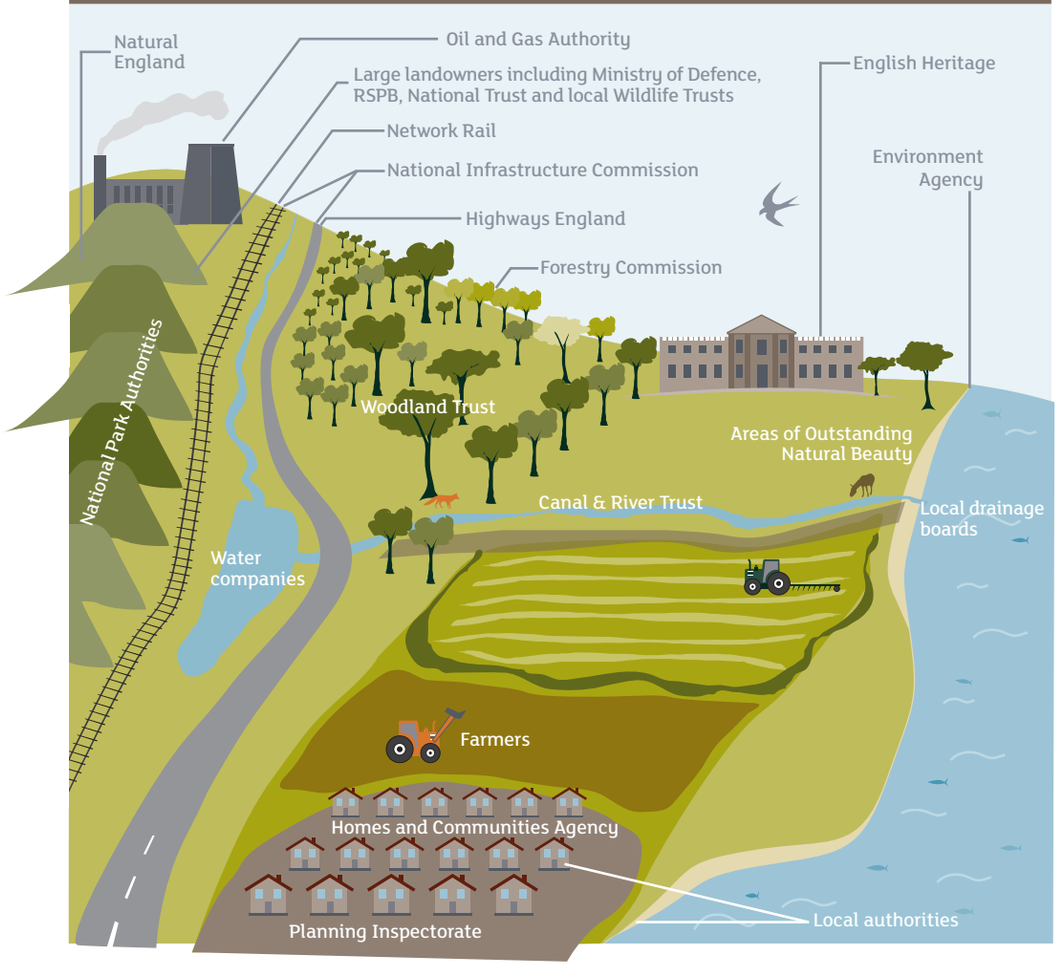
Increasingly the role of land in economic theory is coming under scrutiny – once again. Since Henry George argued for a land value tax in the 19th century, the question of taxation of land, particularly in the context of a planning system that is a major influence on land value, has been a controversial subject. The failure to design an effective and stable system for capturing the uplift in the value of land that comes with permission for development has, for many, been the Achilles heel of the post-war planning system. The complex and incoherent arrangement of planning conditions, levies, financial contributions and legal agreements which currently exists could sensibly be overhauled as part of a more strategic approach to land.

Towards a more strategic approach

Given all the above, it's hard to avoid the conclusion that we now have a great need and an unprecedented opportunity to develop a more strategic approach to land use. The outcome of the EU referendum provides the chance to rethink agricultural policy and integrate this with forestry (which did not fall under EU legislation), as well as environment policy. And as policies for the natural environment, infrastructure provision and climate change are under review, the timing could not be better.

But it will not be easy. The countervailing pressures, whether technical, financial or political, are considerable. Recent years have seen a retreat from the view that public policy can play a useful role in helping to determine the best, or 'right', use of land, to use the bold words of the 1944 White Paper. But at the same time there have been advances recently in our understanding of the value of land and the functions it performs, despite the significant concerns about the possible watering down of environmental safeguards. Brexit offers the opportunity to think afresh about how to develop a framework of incentives and regulations which meet the land use challenges we face as a nation (see Baroness Parminter, page 28).

Figure 2 | Some of the organisations (Government, charitable and private sector) that currently control and influence land use decisions



We need to start with defining the objectives of a land use strategy and the principles that should govern our decisions on land use. These will need careful consideration but they might initially be framed as:

- to review land use statistics and assess the amount of land required to meet various needs
- to optimise the use of land, taking account of the interactions between different uses
- to integrate consideration of land use into public decision making and investment
- to provide a better basis for taking account of the value of land in land use planning and management decisions

Refining these objectives and beginning to develop policies and institutional structures that address them could be the mission of a new Land Use Commission. The commission would comprise representatives from all the key sectors with an interest in land and, at least initially, would be independent of Government. It might presage the creation in due course of a new Department of Land Use as advocated by Lord Deben (page 18).

A national spatial strategy, as advocated by the TCPA and RTPI, could address regional economic disparities and deliver more balanced regional development. This would require a significant, some might say politically unrealistic, shift from where we are now, including better coordination of land use planning with infrastructure provision. The National Infrastructure Commission is well-placed to explore such an approach. Further work being carried out by the RTPI on this issue could also make an important contribution (see Corinne Swain, page 20).

We are fortunate to be in a position to learn from the work of the Scottish Government. Their commitment to a land use strategy provides a guiding light, although the challenges and pressures affecting land use in England have their own distinctive characteristics. The work carried out recently by bodies such as the Committee on Climate Change can provide a valuable starting point for future work south of the border. We could learn from the National Parks here, as well as from strategic thinking that gave rise to the New National Forest (see John Everitt and Adrian Phillips, page 33) and informed earlier plans for the regeneration of the Thames Gateway (see Sir Terry Farrell, page 37).

We may be a long way from reaping the benefits of a more coherent strategy for land use but many of the building blocks are already in place (see Georgina Mace and Ian Bateman, page 26). We now need to persuade policy makers that a better approach is both possible and desirable.

Neil Sinden is a freelance consultant, a trustee of Common Ground, and formerly Policy and Campaigns Director at CPRE.

Timeline

Key dates

1086: Domesday Book; first comprehensive survey of English land

1235: Statute of Merton gives legal support for land enclosures

1300s-1800s: Enclosure of common and arable land

1700s-1800s: Drainage of the fens by Act of Parliament

1870s: Thirlmere Reservoir proposal in the Lake District stimulates national land use debate

1919: Forestry Commission established

1930s: L. Dudley Stamp initiates First Land Utilisation Survey

1944: White Paper on The Control of Land Use published

1947: Town and Country Planning Act

1949: National Parks and Access to the Countryside Act

1960: Second Land Utilisation Survey initiated by Alice Coleman

1970: Royal Commission on Environmental Pollution established

1973: Britain joins the European Community and the Common Agricultural Policy

1992: UN Framework Convention on Climate Change established; EC Habitats Directive introduced

1997: Kyoto Protocol to UNFCCC (COP3) agreed

1998-2007: Centre for Ecology and Hydrology carries out UK Countryside Survey

1999: Urban Task Force report 'Towards an Urban Renaissance' published

2000: EU Rural Development Regulation (legislating for the European Rural Development Policy) and Water Framework Directive introduced

2001: The Great Fen Project established to restore the fens to their pre-agricultural state

2002: RCEP publishes report on Environmental Planning

2004: Regional Spatial Strategies introduced by the Planning and Compulsory Purchase Act

2008: Climate Change Act establishes the Committee on Climate Change; Planning Act introduces new system for major infrastructure development

2009: Climate Change (Scotland) Act requires preparation of a Scottish Land Use Strategy

2010: Land Use Futures report published by the Government Office for Science, Flood and Water Management Act introduced, and Regional Spatial Strategies abolished

2011: Royal Commission on Environment Pollution abolished and National Ecosystems Assessment report published

2012: National Planning Policy Framework introduced and Natural Capital Committee established

2015: National Infrastructure Commission established and Paris Agreement on climate change negotiated (COP21)

2016: Britain votes to leave the European Union

2017: DEFRA due to publish two 25 year plans for the environment and agriculture

2029: Population of England predicted to reach over 60 million

2060: Government target for 12% of UK land to be wooded

Government target for UK land to be wooded by 2060

12%

Land and government

A Government department focused on land use has to provide a lead if we are to get a grip on strategic land decisions, argues LORD DEBEN.

Small islands blessed with an entrepreneurial people and significant capital resources have to make the use of land a national priority. That means private ownership and public intervention and implies an underlying tension and a need for continual compromise. In this, the fundamentalism of Right or Left has no place. Britain will not stomach a free-for-all nor contemplate nationalisation. So it should not surprise that, despite the innately corporatist assumptions of the 1947 Act and the robust antagonism of the hard Right, our acceptance of this middle way has meant that the planning system remains intact after 70 years, changed in detail but unchallenged in principle.

Its problem is the big picture. Plan-led it may be but site specific it usually becomes. Planning officers and conservation staff often occupy themselves unnecessarily with matters of detail, addressing issues which are at best marginal and at worst simply disagreements about taste. Why on earth, in a post-war estate, designed and constructed by a volume house builder, should building in the roof space, incorporating a garage, or extending the kitchen be the business of the local council? After all, Laurie Barratt's early developments would be enhanced by almost any individualistic change or idiosyncratic adornment. Neighbours' objections would be much better dealt with by a system of mediation in which the right to develop would be upheld unless strong evidence of real harm could be adduced.

By contrast, protecting a conservation area, maintaining the integrity of listed buildings, or stopping incursions into public green space must remain a core part of a local authority's responsibility. That recalibration of effort leaves time and resource for proper land use planning. Stopping urban sprawl, concentrating on the redevelopment of land previously built on, recreating a sense of place, and integrating services, transport, commerce, and housing – these are the real business of planning.

But local authorities can't and won't do it on their own. Government has to get its own house in order. There's no hope of sensible land use while planning is imprisoned within the Department for Communities and Local Government, agriculture in the Department for Environment, Food and Rural Affairs, infrastructure in the Department for Business, Energy and Industrial Strategy, and long-term transport planning in the Department for Transport. We need a Department of Land Use which would bring the strategic elements of all these together. Planning, environment, agriculture, and infrastructure make a cohesive whole and taken together enable us to decide what kind of country we want to leave to our grandchildren. Such coherence would also ensure we can face up to the huge changes we will have to demand from our farmers to deal with flooding and climate change as well as the depletion of the fertility of our soils.

The most urgent social need is for housing. Yet that must not be at the expense of the countryside. Rural land needs protection not just for its own intrinsic value but because ensuring the vibrancy of our towns and cities demands they are intensified, not extended. Bringing home, work, leisure, and worship together reinforces communities, reduces the need to travel, and makes the best use of that scarce resource – land. The immediate action of the Department of Land Use would therefore be to insist on the release of land held by government agencies and quasi-governmental bodies. By reversing of the burden of proof, organisations would have to prove short-term need or they would have to sell. By not waiting to get the most favourable return, the release of large amounts of land would tend to lower prices and make urban brownfield redevelopment economically more attractive. Ministers would be judged by their success in land release and, although there would have to be assumed planning permission on sale, that would set the clock ticking, making development within two years a condition of purchase. This would be accompanied by levies on land which had planning permission but remained undeveloped. Such levies would be designed to stop the land hoarding, or 'landbanking', and artificial rationing now practised by housebuilders and the proceeds would be hypothecated to decontamination of land otherwise suitable for housing.

This release of so much previously developed land would enable a much tougher approach to development on green fields. It would ensure that local authorities concentrate on the integrated planning of our towns and cities and it would make developers recognise that there would no longer be the easy option of using virgin land. Such a concentration of effort on urban redevelopment would drive innovation and imagination in a construction industry used to the easy pickings of greenfield housing and out-of-town development. That strategic shift would provide the foundation for a national land use policy in which growth did not simply sprawl; where the essential spirit and excitement of urban living would be recovered; and where the countryside would be returned to robust health for our grandchildren to cherish.

Lord Deben is Chairman of the UK Committee on Climate Change and former Secretary of State for the Environment and Minister of Agriculture, Fisheries and Food.

'Provision for the right use of land, in accordance with a considered policy, is an essential requirement of the Government's programme of post-war reconstruction.

'The Government believe that a national and positive policy for the right use of land can best be evolved by a continuous process of collaboration.'

Control of Land Use White Paper (1944)

Land use and spatial planning

CORINNE SWAIN suggests that a renewed focus on land use might help give us the strategic planning she wants to see.

It seems ironic for a planner to support the case for a land use strategy, when my profession has long promoted the broader concept of spatial planning. Certainly it was this thinking that heralded the birth of Regional Spatial Strategies (RSSs) in the early 2000s, which sought to integrate policies for the development and use of land – and provide a framework for the investment and operational plans of infrastructure and service providers. But those heady days, when planning was encouraged to work over wide geographies and long timescales, are long since gone.

For those of us who still passionately believe in strategic planning, it is necessary to rethink ways of achieving similar objectives. To my mind there is undoubtedly something missing within England to shape and guide development. Scotland and Wales have much more fully fledged national frameworks, and have devolved planning systems. But in England we lack a national vision and even stated purposes for public planning. The National Planning Policy Framework is a useful summary of policy principles, but lacks any spatial detail. The National Policy Statements for major infrastructure, with one or two exceptions, similarly lack spatial detail.

So could a Land Use Strategy for England have merit? In considering this it is useful to revisit some of the findings from the then Government's Land Use Futures foresight project, completed in 2010. This made a strong case for the need to think strategically about the future of land over longer timescales than usually the case, not least because of the challenges brought by climate change. It highlighted, for example, the scale of essential infrastructure that is at risk from river and coastal flooding (55% of water treatment works and pumping stations, 28% of gas infrastructure, and 20% of rail tracks), and hence the need to manage risks and increase resilience. It explored the emotional and cultural significance of land, and the need for a better system for resolving conflicts between competing land uses, including for renewable energy, as demand for resources intensifies. It was successful in raising awareness of the ecosystem services approach and the value of green infrastructure, but its recommendations on governance structures for a more integrated approach to decision-making got lost in the rush for localism.

Six years on, a new focus on creating a Land Use Strategy could provide the opportunity:

- to identify generic land use objectives, including for areas under severe development pressure but highly fragmented by district boundaries, such as the urban fringe;
- to shine a spotlight on vulnerable areas, such as coastal settlements, subject to longer term sea level rise, and to identify options for managing such threats;
- to explore the potential for climate controlled sub-surface developments which may have benefit in the far future as a way of increasing circulation, commercial and leisure space in central areas;
- to promote the need for amended legislation, such as to enable land value capture to be reinvested in community facilities to achieve more sustainable developments;
- to explore improvements in the way that funding decisions factor in longer term uncertainties, where the costs of delaying action might outweigh immediate savings – on flood defences, for example.

But could there be potentially as much benefit from the process of producing a Land Use Strategy as in the product itself? One of these benefits would be in producing a coordinated evidence base on urban and rural land uses and change statistics in mapped form, refreshing all the valuable data synthesis done in the Land Use Futures study.

Another benefit would be to further mutual understanding and better working relationships as is being achieved at regional scale through the Scottish Land Use Strategy demonstrator projects. This might help re-create a deeper understanding of the interrelationships between natural systems and development than currently achieved through most tick-box approaches to strategic environmental assessment of plans. It is still fashionable to decry RSSs as being just about housing numbers. But there were cases of innovative work, such as in the south east by the Environment Agency, in collaboration with the water companies and regional assembly, modelling the impacts of major growth scenarios on both water supply-demand balances and on sewage flows. This included exploring knock-on environmental implications on river and coastal water quality, rather than seeing infrastructure provision as merely a physical capacity issue. A subsequent round of water cycle studies was undertaken where areas suitable for major development coincided with water quality sensitivity in order to reconcile and mitigate these combined pressures.

Further progress in developing a national perspective on such issues has been made since then. In identifying long-term challenges in the Lie of the Land!, the Town and Country Planning Association identified and overlaid long-term trends in four geographies of England (environmental, economic, social and political), concluding that England's 'development model' needs to be fundamentally reconsidered. Research by the University of Manchester for the Royal Town Planning Institute's (RTPI) Map for England project exposed the range of existing government policies and programmes that have either an explicit or implicit spatial dimension, leading the RTPI to advocate much greater spatial awareness in government decision-making. In common with the Land Use Futures foresight project, both these organisations highlight the significant risks of flooding, water shortages and other environmental constraints in the very parts of the country subject to the greatest housing growth pressures – tensions which will need proactive planning at various spatial scales, including the national, to resolve.

From my perspective, a key challenge now is to get integrated land-use thinking into national infrastructure planning, and a spatial dimension into the evolving national industrial strategy. Any initiative that promotes joined-up thinking between the large number of Government departments that have policy influence over different elements of the land system is certainly worth progressing.

Corinne Swain OBE is an Arup Fellow and a former regional examination-in-public panel chair. She was an advisory network member and final report peer reviewer for the Land Use Futures Foresight project. The views expressed are personal.

A vision for infrastructure

It is vital that infrastructure planning is integrated with land use argues ANDREW WESCOTT.

In an effort to improve decisions on new infrastructure, the National Needs Assessment (NNA) was published in October 2016. The project was chaired by Sir John Armitt, immediate past President of the Institution of Civil Engineers and Deputy Chair for the National Infrastructure Commission (NIC). The steering group consisted of representatives from a number of organisations including the Institution of Civil Engineers, Atkins, Confederation of British Industry, Thames Water, National Grid, Oxford University, Pinsent Masons, Scottish Council for Development and Industry, London First, and Transport for Greater Manchester.

The NNA takes stock of the performance of the UK's infrastructure. It sets out the steps that are needed for a national infrastructure system that is efficient, affordable and sustainable – an infrastructure fit for an innovative and productive global trading nation. It identifies the drivers of future change in infrastructure networks, including economic and population growth, technological change and climate change. It also identifies how these challenges can be addressed and future opportunities harnessed.

The NNA provides the National Infrastructure Commission (NIC) with a blueprint for its own National Infrastructure Assessment (NIA). It guides the NIC towards the immediate infrastructure interventions that are required now, the decisions needed to deliver services for the next generation and scenarios for our infrastructure needs until 2050.

Delivering modern infrastructure for the UK will need a strategic combination of investment to provide new capacity alongside appropriate policies and technologies. These policies need to address long-term land use pressures, particularly in the context of climate change. We cannot afford to spend our way out of infrastructure challenges simply by building new capacity, regardless of wider considerations; nor would that be the smart choice. Technology, enabled by the right policies, provides the opportunity to use new and existing infrastructure capabilities much more efficiently. This will enable high quality affordable services. Infrastructure policy should involve a combination of increased capacity where necessary, optimised by technology.

Technological innovation means that people are paying for infrastructure services in different ways – from Uber taxi car rides to bundled telecoms packages. Paying for road use with car tax and duty on fuel will become obsolete as vehicles become powered by electricity (a low tax fuel) and car ownership diminishes. Charging per trip with smart metering provides a more flexible way of paying for roads while enabling smarter management of demand.

Some of the greatest opportunities for innovation are in people's homes and workplaces – working and socialising with ultra-fast digital connectivity that removes a need to travel, smarter use of energy and storage which can be balanced with intermittent renewable energy supplies, energy generation with cheap photovoltaic cells, drastic reductions in demand for heating and cooling through intelligent design and retrofit, re-use of rainwater and sewage, and resource recovery from solid waste. These are all opportunities that should be harnessed in new or retrofitted buildings.

The UK needs a long-term strategic approach to infrastructure provision that can cope with future uncertainties (in population, technological development and climate), but commits to critical decisions when they are needed. Land use considerations must be a core part of this strategic approach. Many aspects of infrastructure provision can be scaled up or down depending on changing needs – this particularly applies to small-scale supplies and actions to manage demand – these are 'low-regrets' measures. On the other hand, certain critical decisions need to be made about major investment and policy commitments. Many of these decisions are now overdue.

There is ongoing debate about the relationship of housing and infrastructure and whether housing should in fact be classified as infrastructure. Housing differs from the other infrastructure sectors. It is not a network and investments in housing can vary considerably in scale; however, it shares inextricable links with other forms of infrastructure – in particular with transport, energy, water, digital, flooding and waste.

Inadequate supply of housing is constraining Britain's economic opportunities. Local planning processes and private housing developers do not have the appropriate system for delivering enough development, either via greenfield construction or through densification of existing urban areas. Uncertainty as to where new housing, population and economic activity will be located undermines our capacity to plan infrastructure services for the future. A more strategic approach to land use at a national level could help to manage this better.

Housing development will always require a balance between local and national objectives. At the moment national needs are not being met by the local planning system. While housing is not part of the NIC's official remit, the NNA has made the following recommendations to bring the planning of housing and economic infrastructure together which could help secure a more integrated approach provided proper account is taken of wider land use considerations:

1. The NIC should undertake a comprehensive review of public land available for housing. Once completed it should seek out opportunities to unlock this land for development through the provision of economic infrastructure.

2. Housing should be considered as part of the Nationally Significant Infrastructure Planning (NSIP) regime to enable opportunities for housing to be brought forward with new infrastructure schemes in the right locations.

Devolution holds potential to increase democratic accountability and levels of housing delivery, through enabling sub-national advocacy and drives to attract investment. It is vital that infrastructure investment is integrated with wider land use planning. Social wellbeing, employment growth and economic competitiveness are put at risk by a failure to fully integrate the provision of housing and infrastructure across local authority boundaries. This integration needs to occur at a range of scales, which could be enhanced by the devolution of powers and responsibilities to combined authorities. However, there remains a need for decision-making on the national level to actively enable and shape sustainable housing growth and infrastructure development rather than simply responding to existing demand.

Andrew Wescott is Head of Policy and Public Affairs at the Institution of Civil Engineers.

Climate change and land use

A thought-through land use strategy can help mitigate the impact of climate change, says BARONESS YOUNG.

Land is a scarce commodity and, indeed, could become even scarcer, given the incursion from the sea. It is beset by a wide range of pressures from our growing population, particularly in the south of England. We need our land to deliver a range of public benefits, for people and biodiversity including, vitally, to help cope with climate change. A more strategic and integrated approach is needed if we are going to balance all these pressures.

Climate change is increasing pressure on land. We will lose some of our scarce resource down the east coast with sea level rise. Increased storminess and periodic drought is already producing greater erosion of soils which have been impoverished by intensive management for agricultural production, in the lowlands, and overgrazing by sheep and by deer, in the uplands. The first task of a land use strategy must be to protect the basic resource, with agricultural and forestry policies targeted on more sustainable management of our soils. Trees can help with this: stabilising soils, boosting infiltration of rain into the ground 16-fold and reducing fast run-off of water and sediment.

Planning of development also needs to be thought through in an integrated way with settlements designed to avoid areas of increasing flood risk and to ensure new development doesn't make the risk of flooding for new and existing properties worse. Settlements need to have adequate green open spaces and trees, to foster walking and cycling rather than driving for the sake of people's health, especially their mental health, and to contribute to the reduction in carbon emissions. Designing green space and trees into the built environment also help with heat reduction to mitigate the impact of heatwaves, which can be killers – particularly for our older people. Further research is needed to assess whether substantial planting of trees around our cities could deliver temperature reduction, as has been tried in countries currently hotter than the UK but whose temperatures we could well approach in due course.

Infrastructure planning of roads, utilities, hospitals, schools and other public services is needed so they are located and designed in ways that ensure they are adapted to flood, heat and other pressures. These pressures will increase with climate change and can cause disastrous loss of key public services. The loss of water supply to large parts of the country in times of flood is bad enough, but we have been very, very close to losing power supplies for extensive periods which would cripple services, communications and emergency support. A significant number of our current electricity sub-stations are in the flood zone. An integrated approach to land use and planning is needed to ensure our settlements are resilient in the face of climate change as well as ensuring they help reduce carbon emissions.

There is much loose talk, particularly in the aftermath of the Brexit vote, about the need for food security. We do need to decide how we want to ensure our rising population is to be fed and how much land that will require and how it should be managed. Climate change will raise challenges for water supply and sustainable land use for agriculture, while some benefits may come from faster growth with temperature rise. Crop types will need to change, cultivation methods adjust and new ways of dealing with new pests will have to be grasped. This would be pretty complicated on its own, and much more complicated if we have not used the opportunity of a strategic approach to land use to think through whether we really want pineapples in Kent and zebu grazing in Suffolk!

> **'We cannot continue to pollute the atmosphere, poison the ocean and exhaust the land. There isn't any more available.'**
>
> Stephen Hawking

The debate about farming for the future is as one with the debate on how to tackle the long decline of our biodiversity and the degradation and possible disappearance of species, habitats and key wildlife sites in the face of climate change. Much of our most precious and most beset wildlife is currently trapped in isolated zoos, our Sites of Special Scientific Interest and local wildlife sites. The Lawton Review stressed the need for landscape-scale conservation actions to ensure biodiversity has a sporting chance to move and adapt in the face of climate change.

Whatever changes follow Common Agricultural Policy post-Brexit, they must make sure that the urgent task of reversing declines in our once common and typical wildlife of farmland is built into an integrated approach to land use and practice for agriculture. Farmers, with the right signals and incentives, are up for delivering multi-purpose land management, including climate change mitigation. We must argue with Government to ensure the Treasury doesn't simply run off with the bulk of the £3 billion currently invested in farming subsidy.

The one silver lining following the EU referendum is the opportunity to design an integrated land use strategy from scratch, which enables the multiple uses we need land for to be rationalised and balanced, in the context of climate change. Scotland has made a credible start with its land use strategy. Why can't the rest of the UK follow suit?

Baroness Young of Old Scone is Chair of the Woodland Trust, former Chair of English Nature, and former Chief Executive of the Environment Agency and the Royal Society for the Protection of Birds.

Making better land use decisions

GEORGINA MACE and IAN BATEMAN look at ways in which we can evaluate properly the many and varied benefits of our land.

Land use and the way in which decisions are made about what to do where are both important areas of policy debate. Most of the land in the UK is privately owned, and clearly the owners, land managers and farmers are major players in determining land use. Society, through the actions of public policy makers, however, also plays a substantial role in influencing land use via mechanisms such as planning policy, regulations, subsidies and other incentives. This is important, because land use can provide many benefits ranging from the production of marketed goods, such as food or timber, to a wide variety of non-market public goods, including clean air and rivers, recreational green spaces and places for healthy exercise, the storage of greenhouse gases and as species and habitat conservation.

There is an ongoing debate about the extent to which land use should be modified to change the mix of private and public goods. This has been further stimulated by the decision to leave the EU, with the opportunity that offers for developing new policies for agriculture and the environment. The debate also includes how we should incorporate the natural variability of the environment into our use of different land areas across the country, the consequent benefits and costs of alternative land uses in different areas, how we plan for future land use in the face of increasing pressures such as population growth and more extreme weather, and the extent to which decisions should be made at local, regional or national level.

Land use decisions are becoming more complicated and the simple distinction between agriculture, built infrastructure and nature conservation areas is no longer adequate. There are many more diverse and pressing needs and demands from the land in our increasingly crowded island, especially as we start to face changes in climate; demands for both higher agricultural production with lower environmental impacts, and the need to also accommodate large infrastructure projects. For example, what is the best way to decide about land use for agriculture versus recreation? How can policy-makers ensure that the critical role played by land areas for flood control and climate regulation is secured? How can we best meet national long-term obligations for nature conservation?

As members of the Government's Natural Capital Committee (NCC), our recent work focuses on considering the land as a system that provides a set of goods and services to people. We use environmental and economic science to examine alternative approaches to land use, and then review the overall costs and benefits of alternative uses as well as seeking to understand who are the winners and losers. A key activity is to provide new decision support 'tools' to help decision-makers make the best use of available resources in the face of rising pressures.

Our work starts with documenting the many benefits that are or can be secured from the land based on the natural science of ecosystem and environmental services. Some of these benefits are well-known and well-studied (such as food and timber supplies, water quantity and quality) and most of these have their values at least partly reflected in market prices and stem from well-established systems for production and distribution. But we are also concerned about emerging priorities for land uses that underpin a safe and healthy environment for everyone (such as flood regulation, climate regulation, pest and disease control, and the recreational and health benefits of green spaces).

These benefits don't have market prices, but the benefits they provide can be estimated via a series of economic valuation tools, and these values can be substantial. Other benefits are very precious to many people but are often very difficult to value reliably (such as wild species and habitats). However, there are often commonly held objectives regarding the conservation of such assets (that no species should be allowed to risk extinction, for example) and the economic costs of delivering such objectives can be calculated. While these costs are not the benefit value of these assets, providing those costs are paid and the objectives delivered (such as species are indeed conserved) then this ensures that such precious assets are not treated as if they are of no value, and, indeed, are guaranteed their place in decisions.

In principle, an understanding of these benefits, their costs and the nature of the land uses that can deliver them, would enable decision-makers to design overall land use strategies that meet the most needs at the lowest cost. Environmental economics can deliver such an economically optimal land use strategy if all costs and benefits are monetised. However, society often has more complex goals than just ensuring that land is used in the way that yields the highest value. In particular, how costs and benefits are shared among different groups of people is of common concern. For example, optimal land use might concentrate intensive food production in areas where soil quality and water availability are most appropriate, and leave other areas for wildlife or for plantations. This might be the best strategy from the perspective of ensuring that wild species are conserved. Given the geography of England, however, this could also mean that people in some regions would face monotonous agricultural landscapes with little opportunity for nature or recreation. So there needs to be some recognition of the place-based benefits from natural environments, as well as the overall value of different land uses.

Our pilot study that came out of the work for the UK National Ecosystem Assessment provides some key learnings. We used knowledge from environmental science, maps of both land use types and population distributions, and valuation methods to estimate comparable economic values for different overall approaches to land use decisions over the next 50 years, with and without climate change. We showed that decisions driven solely by market values have much lower aggregate values for the UK population than decisions that take account of the wider range of benefits from the land. Our results strongly emphasise the importance of taking account of where people live, and the local or wider nature of the costs and benefits, alongside the biophysical attributes of the land.

The NCC is interested in how the findings from this work can be incorporated into the 25 year plan for the environment that is now being developed. As academic scientists we are also involved in trying to fill the gaps in knowledge that make a comprehensive plan so difficult, but we are convinced that these science gaps are small compared to the complicated policy and political issues that are raised in decision-making over land use. It is clear to us that the current approach is delivering land use that is far from optimal for almost everyone, and that the risks from perpetuating this approach will increase with greater pressures and with climate and other environmental changes. There are approaches to land use design based on existing environmental and economic science that could be relatively easily developed and whose overall benefit values are several times greater than is currently realised, with much greater gains also being possible.

Dame Georgina Mace is Professor of Biodiversity and Ecosystems at University College London. Ian Bateman OBE is Professor of Environmental Economics at the University of Exeter.

A new agricultural policy

BARONESS PARMINTER on how we must seize the opportunity given to us by Brexit to reform our use of agricultural land.

Most environmentalists will regret the decision of our country at the referendum on membership of the European Union (EU). And few would deny there are challenging times ahead for our countryside, which for generations has shaped our sense of place and national identity. Many battles loom, over funding and regulation, but there is also a glimmer of opportunity from this shake-up for a new and improved agricultural policy which benefits our countryside and people, and heralds a fresh approach to rural land use – if it can be taken.

For decades we have outsourced our management of farming policy to the EU through the Common Agricultural Policy (CAP). Now we must develop an entirely new system for subsidies that works effectively for Britain's 90,000 farms. The responsibility for this huge and complex task falls to the Department for Environment, Food and Rural Affairs (DEFRA) whose capacity is already under strain due to spending cuts. This shortage of resource and expertise – combined with a continued Government zeal for de-regulation – means there is a risk these changes will have a profoundly negative impact on our countryside.

Yet, while the CAP plays a vital role in supporting British farmers and enabling small farms to compete, it hasn't been an unmitigated success. It has kept Europe fed but its approach to increasing production has resulted over the years in 'butter mountains', 'wine lakes' and increases in land prices. Most of the funds paid out – via the basic farm payment – are in proportion to the area of land farmed. As such, it is estimated that 80% of the payment goes to the 20% largest businesses.

Furthermore, the CAP is depleting our natural resources, despite more recent attempts to improve it through requiring basic greening measures for receipt of the basic support, plus separate targeted funds to support environmental measures. The 2016 State of Nature report confirms agricultural policy as the most significant driver of decline on our wildlife and our biodiversity, suggesting we are among the most nature-depleted countries in the world. Farmland birds have declined, flower meadows have been ploughed up and honeybees have suffered to name but three casualties. The drive for agricultural intensification has also resulted in high usage of synthetic fertilisers and pesticides; soils being depleted; and heavy greenhouse gas emissions.

So we have a historic opportunity: a chance to change the basis of UK agricultural policy and set it in a new direction. A direction that enables farmers to have thriving businesses but which also mitigates the weaknesses of the CAP and increases protection of the environment. This approach should be guided by a more strategic approach to land use, which recognises the multiple-functions that rural land management performs, particularly in an era of climate change. It is encouraging for example that Brexit allows us to integrate policies towards farming and forestry, which was not possible under the EU.

Primarily, we must reward farmers for the public goods they provide – producing healthy food and protecting the natural capital of our farmed landscapes (such as carbon storage, flood prevention and clean water) on which we depend; building up our 'natural health service' through a landscape we can wander in and wonder at.

'The wise man, too, will keep his stock of bees
In a sheltered corner of his garden patch,
Where they may winter warmly, breed and hatch
New swarms to fill his combs and fertilize his trees.'

Excerpt from 'The Land', Vita Sackville-West

Promoting the public benefits of investing in our countryside and British farming is essential if we are to successfully make the case for continuing taxpayer support to farmers, presently £3 billion a year. With continuing pressure on the public purse there is no doubt there will be calls to divert money away from agriculture to other purposes, such as health. The only way to maintain farm support is if future subsidies are guided by a more coherent approach to land use. They must not seen as propping up an industry but an investment in the provision of healthy locally produced food, high animal welfare standards and protecting the countryside as a resource for the whole population.

The new approach must reward those who deliver the biggest outcomes, not those who have the most land. It must give particular support to farmers in environmentally sensitive areas, who otherwise could not survive financially, with all the impacts that would have on rural communities that rely on the managed landscape as the bedrock of local tourism.

Our agricultural priority should be to build the health of our country, its land and people. As a first step, we need effective public consultation about the future of farming and food policy. All of us have to eat food to live and have a stake in the future direction of our countryside. And with farm support only guaranteed until 2020, we need to chart a new course urgently so there is time for farmers to plan for changes in how they run their businesses.

We should be optimistic about achieving this new vision for food and farming which will shape the future of our precious countryside and provide the basis for a coherent strategy towards rural land use. It is a concern though that the Government currently remains intent on producing a 25-year plan for the environment separately from its post-CAP policy work. More than ever we need one vision for our food and farmed land which combines the goals of feeding a growing population and protecting natural resources. Pressure must be maintained from all quarters to ensure the right changes happen. The future of our countryside is at stake. We simply cannot afford to get it wrong.

Baroness Parminter is the Liberal Democrat spokesperson on the Environment, Food and Rural Affairs in the House of Lords and former Chief Executive of the Campaign to Protect Rural England.

A rural land management policy

A series of contracts and plans could be a way of managing the complex requirements of an over-arching land use strategy suggests MERRICK DENTON-THOMPSON.

The distinctive variations in the English countryside defines our nation, with so much variety in such a small place. The planning system has generally been successful in retaining the clear definition between town and country but it has concentrated on regulating development and has ignored the gradual decline in the quality of the countryside. The largely hidden and damaging impacts of day-to-day management decisions in farming are far more profound than any development has been.

The Common Agricultural Policy (CAP) gave the farming industry much needed security and support despite a range of unintended consequences. For example, capital grants supported the removal of thousands of miles of hedges, of woods, ploughing up meadows and the drainage of wetlands in the 1970s and 80s. Furthermore there was a loss overnight of mixed farming as a result of guaranteed markets and prices in the 1980s and 90s. Perhaps the most damaging consequence of such support, however, has been the suppression of natural systems, the power of which had at one time been harnessed to the benefit of food production. The loss of the biodiversity of our soils, the loss of soil structure and of the soil itself has been little short of a catastrophe. The diffuse pollution into rivers and aquifers of phosphates and nitrates, the unacceptable level of greenhouse gases produced by artificial fertilisers, the ploughing of Scheduled Ancient Monuments, the devastating and irrevocable damage to the country's wildlife and overall erosion of the rich variations in the quality of the English countryside – all of this has been done with the help of public investment.

A lot has also been done to try to reverse some of these outcomes through agri-environment programmes such as the Countryside Stewardship scheme (although recently there has been a backward move by the reduction of the target for such schemes from 70% to 35% of the countryside). We all must applaud those farmers who do so much to conserve what we all value – but there are too few of them.

Public support for the farming community currently stands at £3 billion per year and is subject to a range of cross-compliance conditions, but these have never been articulated as positive outcomes for the public. The relationship between the farming community and the public is not helped by the constant reference to farm subsidies when, in fact, farm subsidies ended in 2000. The public are paying for a range of services that are produced through the way land is managed for the production of food. Today even one of the most profitable sectors, the arable sector, relies on 51% of profit coming from public investment (Farm Business Survey by Andersons).

Over the past 50 years new pressures on the countryside have emerged, apart from those associated with increasing population: the need for clean water, clean air, the new focus on renewable energy, the realisation that ultimately there is a symbiotic relationship between humanity and natural ecosystems, the new imperative for resilience to the impacts of climate change, the problems of biosecurity, and the opportunities for advancing the health and wellbeing of society through improved access to the countryside. These, alongside other pressures, are competing for space at a time when we produce less than 60% of the food we consume and there are serious challenges to the sustainability of current food production systems. Surely we have to plan positively for sustainable food production and for the integration of all the competing interests in an increasingly uncertain world. A disciplined approach to integrate the desired outcomes from our countryside can only be achieved by a review of rural land use and developing an associated rural land use strategy to meet the needs of both town and country. We need to plan positively for sustainable food production. Public intervention systems are needed to support the farming industry to achieve this new objective through a new National Rural Land Management Policy articulated at a landscape scale that is easily interpreted and actioned by individual farms.

It is essential that we continue to invest in supporting the farming industry as so many of the benefits that emerge from farming are difficult to quantify in traditional cost-benefit analysis terms. A clear agenda needs to be articulated from the public perspective, and the focus on delivery needs to be through collaboration, rather than dominated by regulation. People need to understand what public goods are being delivered by the investment, so accountability must form part of any new relationship between the public and private landowners and farmers.

The National Character Map of England would be the most efficient framework for setting and delivering a new Rural Land Management Policy. The map was produced by Natural England and identifies 159 distinct landscapes character areas that have been formed over thousands of years through the interaction between mankind and the natural landscape. The variations in geology, topography, soils, micro-climate and wildlife have resulted in specific adaptations to meet the needs of local people, creating the rich variety in our countryside. The reference to character provides the direct link with people; these are places everyone can understand and relate to, such as the New Forest or the South Pennines. But they are places for which scientific description can also be applied and, as a result, they are an effective way of targeting specific policies and programmes.

A new relationship with the farming community could emerge by reducing regulation to a safety net status and develop a new contract-based arrangement. The preparation of the farm/estate plan would be how the farming and landowning community responded to the landscape-scale public agenda, on which any contract would be based. We must pay the farming industry for delivery of our Natural Capital – clean water, clean air, for resilience to climate change, for carbon sequestration, for restored soils and for thriving ecosystems. We must plan for renewable energy and improvements to access for health and wellbeing. We must also improve the quality of the landscape. But how should any new relationship be administered?

For 23% of the countryside Statutory Management Plans already exist, those of the protected landscapes of National Parks and Areas of Outstanding Natural Beauty. There is no statutory obligation, however, for anyone to take any action to implement these statutory plans. These plans should be the single articulation of the public agenda for the specific area of protected countryside, bringing together national and local policies for a corporate approach by the public sector in delivery.

These protected landscapes are administered through National Park Authorities, Conservation Boards and Joint Committees, each containing a mixture of national and local representatives from across the public, private and voluntary sectors. They provide a framework for both national and local accountability and could take responsibility to deliver national policies and programmes.

For the remainder of the countryside we need an administrative system for each or a multiple of Character Areas that can draw on all sectors to help set the agenda and deliver it. A system that is locally accountable, can have delegated powers and financial resources but at the same time have the added benefit of drawing on voluntary help and private investment. It should also be a system that works with a thriving farming industry. One option is to draw on the modernised version of the Joint Committee under the Local Government Act – modernised to engage private and voluntary sector involvement with the public sector, at both a local and national scale.

Ultimately, such a process could mature further by making use of the scheme of delegation set out in the Natural Environment and Rural Communities Act 2006 which, by agreement, enables national policy and programmes to be delivered through locally based administrations.

A new opportunity has emerged that permits us to recover the way the public relates to the farming industry, where a clear vision for the countryside can be prepared, and where both the farmer and the public can see what is intended. It would be a system where the rich variety in the landscape of England determines the policy for each place. We can plan and support the transition to sustainable food production, side by side with a multi-purpose countryside to meet the needs of future generations. The public sector will continue to invest in managing the countryside and a new framework developed to make sure investment adheres to a disciplined approach to delivery. A new National Rural Land Management Policy, articulated at a landscape scale through the family of protected landscapes and character areas, providing the brief for individual estate and farm management plans. These plans would form the contract between the farming industry and the public sector, administered and made accountable locally.

Merrick Denton-Thompson OBE FLI is President of the Landscape Institute. He was formerly County Landscape Architect and Assistant Director of Environment at Hampshire County Council and a Board Member of Natural England.

'A nation that destroys its soils destroys itself. Forests are the lungs of our land, purifying the air and giving fresh strength to our people.'

Franklin D. Roosevelt

Land use lessons from The National Forest

As we face up to the unprecedented pressures and uncertainties facing land use in England, JOHN EVERITT and ADRIAN PHILLIPS ask what lessons we can learn from The National Forest, our largest landscape-led regeneration project, on exploiting the opportunities that come with change.

The National Forest was born out of an initiative of the Countryside Commission in the early 1990s, a long-term project to regenerate 200 square miles in the heart of England, covering parts of Staffordshire, Derbyshire and Leicestershire. The vision was simple: to use tree planting as the catalyst for environmental, social and economic regeneration. In just 25 years, The National Forest has achieved a remarkable transformation. The landscape has been reconnected, with 8.5 million trees planted and tree cover increased from an initial 6% to more than 20%; the economy has shifted with a 48% increase in the value of tourism and a burgeoning woodland economy; and community wellbeing has been enhanced with more than 80% of new forest sites created with public access. The location is considered as the number one destination for people to relocate to in the Midlands.

All this has been achieved with just £60m of public funds, which have been channelled through the National Forest Company. This small coordinating body works with the public, private, voluntary and community partners who have been responsible for delivering the forest.

When The National Forest was first created, it was always intended that it should be a model from which learning could be applied elsewhere (implicit in the word 'national'). What are the lessons and where might they be applied?

There are some general principles that have underpinned the success of The National Forest. While some of these may seem obvious, it is the way they have been applied, and the continued commitment to them, that have been so important. The following are the principal lessons that we think are vital in delivering an integrated approach to land use over a large area:

- Vision – keep the vision really simple and accessible to make buy-in easier and enable all parties to unite around a shared ambition.

- Commitment and co-ordination – forests and forested landscapes take years to develop, far longer than political time scales. So the commitment to landscape change needs to be embedded over the long term to enable planning and sustain investment partnership – no single entity can deliver large scale landscape change. So it is important to create a small coordinating body that supports existing partners to deliver, and which can spread the load, responsibility and support.

- Government support – commitment by successive governments across party lines enables political buy in.

- Reliable, long-term funding, albeit at a modest level, enables momentum to build and gives time for initiatives to deliver benefits.

- Innovation and sustainability – public funding should be used to drive change and to put the scheme on a sustainable financial footing. This will provide lasting impact in a way that simply subsidising public benefits cannot.

- Strong local authority support – strong political support at local level is essential and needs to be built into decision making rather than simply vested in the current leadership. Supportive planning policies, signed up to by all authorities, can help the planning system to work with, rather than against, the creation of a forested landscape.

- Strong community buy-in – communities need to own an initiative if it is about changing their landscape. This means that people need to see tangible benefits within a short period of time.

The area selected for The National Forest had distinct environmental, economic and social characteristics: a neglected landscape, industrial decline with the end of mineral extraction, the presence of economically and socially disadvantaged communities and a lack of clear local identity. These challenges became arguments to embrace positive change at a strategic scale. There are other places in Britain where problems could become opportunities through the application of learning from The National Forest, such as parts of the Green Belt, areas identified for major built development, areas with tourism potential and even areas where farming may decline with the removal of the Common Agricultural Policy.

The promotion of a number of major landscape restoration schemes, drawing on lessons learnt in The National Forest, though adapted to differing local circumstances, would have huge local impacts and be of great national significance.

Locally, in the areas affected, new landscapes would be created, with rebalanced land uses suited to the needs of the 21st century. Millions of people could benefit directly by living in far more attractive environments than would otherwise be the case. Based on The National Forest experience, large-scale, positive approaches provide significant return on investment by improving the environment, growing the economy and building resilient communities.

John Everitt is Chief Executive of the National Forest Company and was previously Chief Executive of the Nottinghamshire Wildlife Trust. Professor Adrian Phillips CBE was Director of the Countryside Commission and former Chair of the World Commission on Protected Areas, as well as previously being chair of CPRE's Policy Committee and a national trustee.

'Each generation takes the earth as trustees … we ought to bequeath to posterity as many forests and orchards as we have exhausted and consumed.'

J. Sterling Morton

Engaging people in the land use debate

HELEN MEECH argues that involving people in the debate about land use and involving them in projects on the ground must underpin any wider strategy.

Britain is one of the most ecologically depleted nations on Earth. We have lost all our large carnivores and most of our large herbivores. The latest State of Nature report reveals that 56% of species have declined over recent decades, and that more than 1 in 10 species are under threat of disappearing from our shores altogether.

As a result of the damage to them, our ecosystems have almost ceased to function. Because of the absence of trees and loss of soil, our watersheds no longer hold back water, with rainfall flashing off the hills and causing flooding downstream. At the same time, our population and food demand are increasing. We are approaching the limits of our oil and water supply. Climate change is already having an impact on the world's major food-producing regions, particularly through reduced water availability. Food prices are fluctuating in response to a variety of factors. The response has been a widespread concern about food security and an assumption that our top priority here in Britain will be to produce more food than we do now.

Development pressures intensify too – the Government is desperate for growth to kick-start the economy, and the UK's population, needing houses, jobs and public services, is approaching 70 million – so our land needs to work harder than ever before.

But just as these reasons seem clear and urgent, now is precisely the time to think more deeply about our response and how public engagement needs to be at its heart. As pressures on land use rise further, there is a danger of making false choices between producing food, developing land and caring for the environment. For as soon as we think beyond the short term, it is clear that our long-term food security, indeed our long-term survival, is entirely dependent on the health of our natural resources. It is clear that a more strategic approach to land use is needed, yet the current siloed policy framework is failing to deliver this. We need a multi-functional land use policy – one which considers the breadth of public needs, including the need to make space for nature, alongside food and development.

Rewilding offers hope for the future: a chance to bring nature back to life and restore the living systems on which we all depend. It is a chance to work with communities to restore to parts of Britain the wonder and enchantment of wild nature; to allow magnificent lost creatures to live here once more; and to provide people with some of the rich and raw experiences of which we have been deprived. We don't want to rewild everywhere, but we do want to see a break from the monotonous uses of land and sea that have caused so much damage and loss – to people as well as nature.

But who decides about how land is best used in Britain? Where should we rewild and where is best placed to produce food? For the past 60 years, land management has been largely driven by the Common Agricultural Policy, which has incentivised intensive farming and food production.

It is vital we involve the public in defining what they value from land, and in determining what public benefit they wish to see delivered.

Digital technology offers a raft of new ways to do this, including capturing insight on what is valued through vlogs and blogs, through to participative policy making using online platforms such as Loomio or DemocracyOS. Digital platforms also offer an opportunity to visualise what future landscapes might look like, both through simple tools such as photo editing and animation, through to new technologies such as augmented reality.

We also need to involve communities in practical projects on the ground. Values are driven by actions, not awareness, so it is essential to give people a sense of agency and an opportunity to get involved in projects on the ground. Indeed, any successful rewilding project must have people at its heart.

There are some great examples of projects involving communities in flood risk management. In Pickering, North Yorkshire, rather than building a £20 million concrete flood wall through the centre of town, the community planted 29 hectares of woodland upstream to naturally soak up water, and created hundreds of natural obstructions in the river made of logs, branches and heather to restore its natural flow. The flood risk has now fallen from 25%, to just 4%, and at a fraction of the cost of hard defences.

The recent Flood Resilience Review missed the opportunity to take action on projects that work with nature to reduce flood risk. Local people should be at the heart of decision making on flood management, supported by expert advice and open access data to enable the best possible decision-making on priorities and funds.

We are living in uncertain times. It is unclear when (and perhaps even if) Brexit will happen, what the implications will be for nature and land management policy, and the timetable by which these crucial decisions will be made. Defra's 25 year plan for the environment has a key role to play in mapping out the future policy and funding framework for rural land use. This should advance and expand natural environment policy to move beyond site protection to ecosystem restoration, supported by a more progressive funding mechanism based on public payment for delivery of public benefit.

The Brexit vote shows there is appetite for a change to the way that decisions are made. There is a need for politics and decision making to be much more participatory, involving people at the grassroots with a clear focus on reducing the huge inequalities in society. How can we give communities a voice in environmental decisions? How can we empower them to shape the places in which they live, and to restore natural systems to deliver benefits for the many, rather than the few? It is time now to come together to define what that change should look like. Let's build rewilding into that picture.

Helen Meech is Director of Rewilding Britain and former Assistant Director, Outdoors and Nature Engagement, at the National Trust.

'The land belongs to the future.'
Willa Cather

A vision for the land

We need to be more visionary in our planning if we are to realise successful use of our land, says SIR TERRY FARRELL.

Humankind's thoughtful use of land undoubtedly is becoming more and more of a pressing urgency. Pollution, climate change, the ever increasing reduction in natural species, along with human city-making on an unprecedented scale, have made the proper planning of land and land use a top priority for our very survival in the long term. And, for all of us alive now, we also have to plan the basis for achieving any quality of life in the short term.

Spatial planning begins not with legal framework plans, but with a vision or the aspiration that gives us direction of travel. And the natural environment, nature and the countryside is inseparable from planning our towns and cities. To help protect habitat pressures on the former, the latter – the urban environments – need to be much more consciously planned: we must have more and better town and city planning to safeguard the natural environment. Proactive spatial planning must be the way forward; at present there is a woeful lack of proactive spatial planning in all that we do.

Even though city-making is the world's biggest 21st century endeavour, most of it is opportunistic at best, and haphazardness and 'no-planning' is the norm. By spatial planning, I don't mean 'designed' top-down arrangement of parts, beautiful as they may be. It is much more about holistic thinking and about going with the natural flow of all the parts working together.

There is a classic case with our bigger infrastructure plans that are afoot at the moment. The case for airport capacity is to my mind being based on overly circumscribed criteria – primarily the business case for air travel and in a very limited way. Or the focus is on immediate pollution issues in the airport area, which are calculated with little reference to the larger city around it. Similarly, the case for locations and for the execution of new high speed rail stations is confined too closely to operational and speed of delivery issues. Yet all these should be seen as, importantly, first and foremost city-making issues. Where to put airport runways and rail stations are subsets of proper spatial considerations for the city as a whole.

I have worked with the cities of Birmingham, Crewe, Leeds and in London at Old Oak Common and Euston, on the spatial planning implications of HS2. In all these locations and cities, transport operational and delivery concerns have always taken precedence over proper spatial and overall city planning. I also talked to and examined the plans of most of the south east's airports – Birmingham, Luton, Heathrow – and, again, the 'bubble' of air transport planning predominates most of the thinking.

Political expediency, due to the institutionalised short-termism driven by elections, means that even medium-term spatial planning is just not done. And so single issue politics and planning soundbites take over, with horizons set merely on delivery. A classic case of single issue planning raised itself when the then Government, at the beginning of this century, declared that the 50-mile long Thames Estuary, aka 'the biggest regeneration project in Europe', was all about meeting the housing shortage. A quick study I did showed that all the housing shortage could be fitted into a small corner of the land available, so I began to frame a vision based on landscape regeneration. Eventually, a spatial plan on this basis was adopted by the then Labour

Government, which led to the estuary having landscape as its declared focus; considerable funds were then expended on this front.

I have thought a great deal since about landscape and density in our cities. Densification is often negatively perceived as 'concreting over' our urban areas – but this is not borne out by reality. In fact, if done the right way with good spatial proactive planning, then greater density can well mean more parks, gardens and other open spaces and improved public access to all of these. In London I have demonstrated this with projects like King's Cross Goodsyard, the Olympic Park and complex at Stratford and even schemes like Canary Wharf. Where there once was not a tree, where you were not allowed into secure industrial areas, there are now parks, gardens, trees and above all, public access. This is abundantly apparent with the long lengths of canal and river banks such as the South Bank walkway which was private and secured 'no entry' industrial land. I like to compare the film footage in the 1960s of Churchill's funeral barge on its way down the Thames. Where there were at that time a mass of cranes tipping their crowns to show respect, there is now the award winning landscape of Potters Field – again all part of several miles of now accessible river frontage.

All these points are well exemplified by the vision of London as a National Park City. This is in our grasp, and underlines how development density and rich natural landscape are not mutually exclusive. Take for example the richest ecological habitat in all the south-east of England: the 4 million back gardens of houses. These would not exist if there were not developers' houses, garden walls, roads with street lamps and nearby shops to help the houses survive. There are 8 million trees in London and more 500 farms in outer London. It is not just in London – canal and river banks in our masterplans at Newcastle Quayside, Birmingham's Brindley Place and Edinburgh's The Exchange, now have public access, trees and squares where there once were publicly inaccessible railyards, docks and industrial buildings.

All these projects exemplify the CPRE's mantra (and I paraphrase) of 'the best way to protect the countryside is by ensuring urban areas have a much better offer as a place to live'. Urbanisation, if properly and proactively and spatially planned, will indeed provide a much better offer.

British cities and towns have hugely benefited from 1000 years of relative peace and stability. In this slow maturing urban landscape we have made a real and positive virtue of evolutionary planning which has resulted in standards of urban liveability that, generally speaking, are the envy of the world. But population growth and global warming effects like sea rises and fluvial flooding, as well as temperature rises and rainfall changes, are making us think again. The scale, complexity and seriousness of these issues mean we cannot any longer proceed as before, treating land as a disposable asset. We have now got to plan – and proactively plan for rapid and radical change.

Sir Terry Farrell CBE is a leading British architect and urban planner.

'By far the greatest and most admirable form of wisdom is that needed to plan and beautify cities and human communities.'

Socrates

Annex

Principles of Sustainable Land Use from the Scottish Land Use Strategy (2016):

a. Opportunities for land use to deliver multiple benefits should be encouraged.

b. Regulation should continue to protect essential public interests whilst placing as light a burden on businesses as is consistent with achieving its purpose. Incentives should be efficient and cost-effective.

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.

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.

e. Landscape change should be managed positively and sympathetically, considering the implications of change at a scale appropriate to the landscape in question, given that all Scotland's landscapes are important to our sense of identity and to our individual and social wellbeing.

f. Land use decisions should be informed by an understanding of the opportunities and threats brought about by the changing climate. Greenhouse gas emissions associated with land use should be reduced and land should continue to contribute to delivering climate change adaptation and mitigation objectives.

g. Where land has ceased to fulfil a useful function because it is derelict or vacant, this represents a significant loss of economic potential and amenity for the community concerned. It should be a priority to examine options for restoring all such land to economically, socially or environmentally productive uses.

h. Outdoor recreation opportunities and public access to land should be encouraged, along with the provision of accessible green space close to where people live, given their importance for health and wellbeing.

i. People should have opportunities to contribute to debates and decisions about land use and management decisions which affect their lives and their future.

j. Opportunities to broaden our understanding of the links between land use and daily living should be encouraged.

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CPRE is an environmental charity campaigning for a beautiful and living countryside that everyone can value and enjoy.

We aim to protect and enhance the countryside by supporting policies which:

- Promote the distinctiveness and resilience of the wider landscape
- Foster the growth of local food economies, from field to fork
- Protect and restore soils as a strategic resource and protect the best farmland from development
- Influence the approach of the Government towards the countryside and land-use planning

Design: Tranter design. Print: Lavenham Press.

Campaign to Protect Rural England
Standing up for your countryside

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