

# Safeguarding the societal value of land

**Dr Mark Everard**

*Visiting Research Fellow, Faculty of Environment and Technology, University of the West of England*

**Tom Appleby**

*Senior Lecturer in Law, School of the Built and Natural Environments, University of the West of England; Visiting Research Fellow, University of Bristol Law School*

*There have been broad transitions in recognition and protection of benefits derived by society from land, landscapes and their associated ecosystems, predominantly over the past two centuries and accelerated recently through the paradigm of 'ecosystem services'. Trends throughout the twentieth century in the UK and South Africa, evidenced by progressive changes in statute law and land use subsidies, demonstrate a transition from entrenchment of the interests of private land owners towards protection of the many public benefits flowing from habitats, which may be in private ownership. The implications of sustainable development are that wise stewardship of ecosystem resources should be fully integrated into social and economic development, supporting the needs of all of society including future generations and not merely those of current vested land or resource-owning interests. This necessitates the evolution both of the common law to protect a broader set of rights and also of inclusive governance systems to support more enduring policies and decisions. Ecosystem services offer a comprehensible and tractable means, amenable both to economic valuation and internalisation into existing decision-support and management tools, the better to recognise, negotiate and safeguard the many public benefits derived at local to global scales from land, landscapes and their associated ecosystems.*

## Introduction<sup>1</sup>

There is an extensive academic literature on relative cultural perspectives about the value of land, landscapes, ecosystems and natural resources (reviewed for example by Posey<sup>2</sup> and Strang<sup>3</sup>) and water rights that are affected by and which support productive land uses and human

activities (for example van Koppen et al<sup>4</sup>). Our purpose in this article is not to review that large body of work. Rather, it is to consider broader transitions in the recognition and protection of the benefits derived by society from land and landscapes, predominantly over the past two centuries, in so far as they inform us about the necessary evolution of legal systems. Although the focus of this paper is on the UK, pertinent lessons are drawn from overseas, particularly the emergence of South Africa from the divisive and domineering apartheid era, which brought with it an agenda of reconciliation and redistribution, enshrining the principle of equity over that of hegemony. It is against this political backdrop that substantial reforms have taken place in rights and governance of South African land, water and other natural resources. A significant element of this transition was the patient formulation over a period of three years of what is now the National Water Act (1998),<sup>5</sup> with its ambitious vision for Integrated Water Resources Management (IWRM) including a strong focus on redistribution of water resources towards the poor and the empowerment of historically disadvantaged communities. Rectifying historic abuses and learning about sustainable and equitable uses of both land and water resources are integral to realisation of the Act's high ideals and can inform us about the process and practical issues entailed in a transformation in societal valuation of land and landscapes.

## A transition in societal rights

In the era of low population and in the absence of strongly hierarchical social systems prior to the 'early modern period' (seventeenth century), much European land was managed collaboratively as a common resource, generally

1 The authors would like to thank Dr John Colvin (Open University) for his constructive comments on this article.

2 D A Posey (ed) *Cultural and Spiritual Values of Biodiversity* (ITDG Publishing Rugby 2000).

3 V Strang *Uncommon Ground: Landscape, Values and the Environment* (Explorations in Anthropology) (Berg Publishers Oxford 1997).

4 B van Koppen, M Giordano and J Butterworth (eds) *Community-Based Water Law and Water Resource Management Reform in Developing Countries* Comprehensive Assessment of Water Management in Agriculture Series 5 (CABI Wallingford 2008) <http://www.cabi.org>.

5 Republic of South Africa National Water Act (Act No 36 of 1998) Pretoria, South Africa.

by village communities.<sup>6,7,8</sup> The subsequent enclosure (or inclosure) of land saw much formerly common land taken into fully private ownership and use, sometimes by force and against strong local resistance and bloodshed, installing the class system of lords, vassals and fiefs that characterised the feudal system and, effectively, created a landless working class.<sup>9</sup> For much of subsequent British history, the metaphor of 'An Englishman's home is his castle' applied both literally and in the sense of the absolute right of land owners to develop as they chose regardless of impacts on disenfranchised communities or other classes held by the peasantry bonds of manorialism. This was largely during an era of relatively low settlement densities, with global population not reaching half-a-billion until the onset of the Industrial Revolution, which also saw the burgeoning of cities and conurbations.

Limits to land and water resource use have many similarities with respect to the benefits they can potentially confer to private and public users. The earliest recorded water quality regulation was in fact far earlier than this, put in place by a royal statute of King Richard II in 1388 prohibiting the dumping of 'dung, offal, entrails and other ordure into ditches, rivers, waters ...'. However, subsequent conflicts arising from land, water and other natural resource use were largely resolved at a local level. Manorial court records provide a rich source of case law relating to resource conflicts, particularly with respect to water from the post-medieval period. For example the spread of the once-dominant water meadow system in the catchments of Wessex rivers spurred conflicts between water meadow operators, mills, navigation and fishery interests and other users of river flows.<sup>10</sup>

Once the feudal ownership arrangements of UK land had been simplified through enclosures, privileged development of land by its owner predominated in the UK through to the twentieth century. During the twentieth century, this right was gradually curbed through the introduction of the planning process under the Housing, Town Planning, etc Act 1909 and stricter development controls established, for instance, under the various Town and Country Planning Acts from 1947 onwards. These sought to restrict changes to land use so that they complied with planning policy developed at local and national levels. More recently, and under the auspices of the protection of personal freedoms, the Human Rights Act 1998 brought into UK law Article 1 of the First Protocol of the European Convention on Human Rights, securing the individual's rights to enjoy their possessions

without undue interference from the state. The combination of the two trends is almost contradictory: the Human Rights Act confers an implicit right to develop, which resolves into a freedom for land owners to carry out residential, industrial and agricultural activities, while planning legislation introduces a proviso that these activities do not significantly prejudice the rights and enjoyment of life of others and sets up a regime of democratic accountability for development.

### Land use rights in transition

The twentieth century examples of UK planning and human rights laws cited above also illustrate early stages in a significant transition relating to land, water and other natural resource use decisions. They mark the beginning of a transfer from uncontested hegemony towards recognition of wider societal impacts and the consequent need for a (marginally) more participative and equitable process for respecting the rights and responsibilities of all constituencies and not just land-owning interests.

Indeed, there has been a progressive series of shifts in land use policies relating to the balance of private versus public benefit, supported by a system of agri-environment subsidies applicable in the UK and across the European Community. Under early implementation of incentive and subsidy payments, such as payments tied to management agreements for land designated in the UK as Sites of Special Scientific Interest (SSSIs, the designation for ecological and/or archaeological value initially under the National Parks and Access to the Countryside Act 1949), payments were generally based on the principle of 'profits foregone'. With hindsight, this form of 'profits foregone' payment is inherently iniquitous, reinforcing an assumed right of land owners to undertake practices destructive to ecosystems and the many societal benefits that flow from them, the implicit assumption being that the public purse should pay the land owner to forego personal profit through holding back on practices that undermine the common good. Thus the feudal system, based on the privilege of land-owning classes, remained tacitly supported by public policy. Furthermore, such initiatives were often poorly targeted and were also reliant upon elective uptake by owners or managers of land.<sup>11</sup> Nevertheless, we have to welcome these early legislative steps towards recognising societal benefits from land in private ownership.

This transition from the rights of merely private benefits (albeit including some indirect public benefits arising from the production of commodities) towards recognition of the rights of the broader environmental and associated public benefits arising from land use is also reflected in the basis of agri-environment payment schemes within the European Community. Although the

6 S J B Cox 'No Tragedy on the Commons' (1985) 7 *Environmental Ethics* 49–61.

7 C J Dahlman *The Open Field System and Beyond: A Property Rights Analysis of an Economic Institution* (Cambridge University Press Cambridge 2008).

8 T Dietz, E Ostrom and P C Stern 'The Struggle to Govern the Commons' (200) 302 *Science* 1907–12.

9 E P Thompson *The Making of the English Working Class* (Penguin Harmondsworth 1991).

10 J Bettey 'The Development of Water Meadows in the Southern Counties' in H Cook, T Williamson (eds) *Water Management in the English Landscape: Field, Marsh and Meadow* (Edinburgh University Press 1999) 179–95.

11 I R Bowler, B W Ilbery 'Agricultural Land-use and Landscape Change under the Post-productivist Transition – Examples from the United Kingdom' in J Baudry and others (eds) *Land-use Changes and Their Environmental Impact in Rural Areas in Europe* (Man & the Biosphere) (Taylor and Francis Abingdon 1999).

environmental consequences of the EU's Common Agricultural Policy (CAP) have been widely and strongly criticised for their impact upon the environment at least prior to the 2003 reform,<sup>12</sup> the CAP did at least contain certain subsidy streams favouring environmentally-advantageous uses of land. These subsidies provided an incentive, albeit without a balancing set of compulsions, supporting the protection of some of the public benefits arising from land that may have been in private ownership.

Particularly since the 1990s, there has been a transition in the UK towards 'positive management' agreements under which land owners are instead rewarded for management of land for identified positive ecological and amenity outcomes, progressively replacing the 'profits foregone' paradigm. SSSI payments became increasingly tied to positive land management,<sup>13</sup> supported by many amendments of the National Parks and Access to the Countryside Act 1949 and its replacement by the Wildlife and Countryside Act 1981 and the Countryside and Rights of Way (CRoW) Act 2000 in England and Wales. Similar legislative changes have taken place north of the border in Scotland.

This package of measures is to be welcomed as not only favouring environmentally and socially beneficial land stewardship but also a distancing from the assumption that owners should be paid *not* to undermine the wellbeing of the public.

This transition in emphasis from private gain to the recognition and safeguarding of societal values arising from land and landscapes is clearly seen in the changing emphasis of the range of land use subsidy schemes that have been implemented in the UK since the 1970s, leading to their current harmonisation since 2005 into the Environmental Stewardship scheme. The succession of British Acts concerned with wildlife and the countryside has also progressively internalised the requirements of a suite of environmental directives emanating from the EU, significantly including the Birds Directive, the Habitats Directive and the Nitrates Directive, which place further protection on habitat of conservation value or a restriction on groundwater pollution from land use practices which may compromise public benefits from land that is generally in private ownership.

The 2003 reform of the CAP marked a further progression in land use subsidies from private to public benefit. Amongst the key policy changes implemented under this reform was a shift in balance from 'Pillar 1' (market price support) towards 'Pillar 2' (rural development and environmental measures). Ten former major CAP payment schemes were collapsed into one new single payment, with subsidies decoupled from production and instead intended better to acknowledge and reward environmentally-friendly farming practices. At least in

theory, farmers would also have greater freedom to farm to the demands of the market and in response to national policies.

Under both 'positive management' SSSI and CAP payments (the latter today routed through the Environmental Stewardship scheme in the UK), the positive public benefits for which the subsidies are constructed are often poorly defined. Indeed, there is significant criticism of the failure of the subsidy system to deliver clear public benefits, with the UK Government itself arguing that large agricultural subsidies are not consistent with sustainable development.<sup>14</sup>

Beyond the health of ecosystems and their many associated public benefits, there has been similar progress in the opening of the UK landscape to public enjoyment, extending from the National Parks and Access to the Countryside Act 1949 through to the 'right to roam' clauses of the CRoW Act 2000. The CRoW Act also set up the statutory nature conservation agency Natural England, established with the purpose of ensuring '... that the natural environment is conserved, enhanced and managed for the benefit of present and future generations, thereby contributing to sustainable development'. This unambiguous link to human benefits further enshrines the protection and promotion of public benefits arising from land and landscapes, regardless of land ownership status.

In parallel developments, the power of the corporate sector has increasingly come under government control through various conventions, protocols, market pressures, environmental and social regulations, and corporate governance requirements. Multinational corporations still have immense influence. Some of them are more economically powerful than many small nations, yet the process of recognising their potential societal benefits over and above private profit alone has been progressive, with business sometimes seen as a key player in the problems but also in their solutions in a world facing daunting sustainability challenges.<sup>15,16</sup>

Given its unique history, the transition in legislation regarding water and other natural resources in South Africa throughout the late twentieth century provides perhaps the most graphic illustration of the transition from hegemony to democratic principles. During the nation's apartheid era, the ruling white, law-making elite progressively annexed the most productive land and water resources through measures such as the Irrigation Act of 1912 under which water constituted the sole property of the owner of the land on which it rose. The Irrigation Act stated: 'He can do whatsoever he pleases with it and neither the owners of lower-lying land nor even the public can claim to be entitled to make any use at all of that water'. Water represents power and wealth in an arid land, so the net effect of this annexation of water and fertile

12 R D Gregory, D G Noble and J Custance (2004) 'The State of Play of Farmland Birds: Population Trends and Conservation Status of Lowland Farmland Birds in the United Kingdom' (2004) 146 *Ibis* 1–13.

13 English Nature 'Accentuate the positive – funding positive management on SSSIs' Press Release (2 March 2001) <http://www.english-nature.org.uk/news/story.asp?ID=259>.

14 Environmental Audit Committee Eleventh Report of Session 2005–06 *Outflanked: The World Trade Organisation, International Trade and Sustainable Development* HC 1455.

15 M Everard *The Business of Biodiversity* (WIT Press Ashurst 2009).

16 J Porritt *Capitalism as if the World Matters* (Earthscan London 2005).

land was effectively to promote the interests of the dominant class which enjoyed privileged access to land and economic power, to the detriment of the disenfranchised (predominantly black) majority of the population. By dramatic contrast, constitutional rights put in place following the collapse of apartheid and the accession of democratic government in 1994 led to broad-ranging new legislation relating to water. Section 3 of the National Water Act 1998 establishes the fundamental principle that water is a national resource owned by the people of South Africa and held in custodianship by the state, to be shared on the basis of equity, sustainability and efficiency. A more graphic, not to mention extremely rapid, transition from hegemony to democratisation of water and land resources is hard to imagine, although implementation remains problematic even years after the revolutionary Act and related legislation was gazetted.<sup>17</sup> The principles are generically valid across the world.

### A parallel evolution of environmental awareness and policy response

The transition in the societal appreciation and valuation of land in the UK and South Africa has not occurred in isolation but within a broader international context of growing environmental awareness. Key elements of the evolution of environmental awareness and the development and engagement with environmentalism and human equity within international discourse during the past century have been extensively reviewed elsewhere<sup>18,19</sup> and will not be repeated here. Suffice to say that they have seeded modern conceptions of sustainable development, integrating the themes of supporting ecosystems with economic and social progress. In essence, this regards ecosystems and their supportive capacities as a property and responsibility of society as a whole, with the need for integrated decision-making that simultaneously respects the integrity of ecosystems, people and the economy, including the rights of all stakeholders. The challenge of sustainable development therefore implicitly includes a more participative approach to decision-making that respects the rights of all of humanity, which depends upon and benefits from the ecological processes performed by land and landscapes. This in turn suggests a fundamental shift away from largely uncontested private rights to develop land, as discussed above. Clearly, the law should react to these changing conceptual and moral perspectives, which are also underpinned by various international protocols and binding commitments.

The emergence of the concept of ecosystem services (discussed in the context of the common law by Everard and Appleby<sup>20</sup>) has been influential in articulating the

multiple benefits provided to society by the functioning of ecosystems. A succinct overview of ecosystem services, together with a now widely-accepted classification under four main categories (provisioning services, regulatory services, cultural services and supporting services), has been developed by the Millennium Ecosystem Assessment (MA).<sup>21</sup>

Ecosystem services make the value of ecosystems comprehensible and tractable in ways that are also amenable to economic valuation through the many ways in which they support human wellbeing and potential. A key aspect of ecosystem services is that they provide benefits at many scales ranging from the local (eg agricultural benefits from soil formation) to the regional (eg nutrient cycling) through to the global (ie climate regulation). This recognition of the provision of services providing benefits to multiple beneficiaries at different scales (local, catchment, national, global) challenges established concepts of property and rights.

### Models of governance protecting societal rights related to land uses

Reflecting on the changes in the balance of rights respectively of private land-owning interests and of the wider societal sectors benefiting from the functions that this land may perform, there is a clear transition from hegemony towards the safeguarding, restoration and realisation of increasing public value. A key question is what model might bring this transition to its logical conclusion?

One potential model is seen today in China. In recent years, communist China has recognised that the massive flooding of the Yangtze River in 1998, which displaced 120 million people, was not as initially described an 'act of God' but that the deforestation of the upland catchment was a major contributory factor to both the amplification of flood peaks and the loss of productive soils through erosion. Furthermore, peaky flows and high sediment loads in the Yangtze are now perceived as prejudicing the navigation and hydroelectric functions and the longevity of the Three Gorges Dam lower down the river system. Since one tenth of the world's population lives in the Yangtze basin, protection or restoration of the ecosystem services that support their needs is critical. As part of its response to this challenge, a massive reforestation programme is under way in the upper catchment of the Yangtze, some of which falls under the Natural Capital Project: China Demonstration Site<sup>22</sup> which will also sequester a substantial mass of carbon. The political regime in China is both authoritarian and attuned to making decisions in the wider public interest, with all land owned by the state with agreements on use of the

17 K Asmal 'Appendix: Reflections on the Birth of the National Water Act, 1998' (2008) 34(6) *Water SA* 662–64.

18 M Everard 'PVC: Reaching for Sustainability' IOM3 (IOM Communications London 2008).

19 Note 15.

20 M Everard, T Appleby (2008) 'Ecosystem Services and the Common Law: Evaluating the Full Scale of Damages' (2008) 20 *ELM* 325–39.

21 Millennium Ecosystem Assessment *Ecosystems & Human Well-being: Synthesis* (Island Press Washington DC 2005).

22 [http://www.naturalcapitalproject.org/ConEX/China\\_ConEX\\_Brochure\\_100708.pdf](http://www.naturalcapitalproject.org/ConEX/China_ConEX_Brochure_100708.pdf).

land allocated to local people who are only now engaging in markets for land use rights. Therefore, the current lack of a strong culture of private land ownership and rights may facilitate this process of landscape-scale restoration. However, it is inevitable that the livelihoods of many in the upper Yangtze catchment will be profoundly altered by such massive interventions, and information on the means by which they are engaged in land use change as interested stakeholders is elusive, or perhaps absent. Given the depth of established property rights in Britain, and a strengthening tradition of stakeholder engagement in policy decision-making and implementation, it is difficult to see the Chinese model of transition in land management for ecosystem services of greatest public benefit working in the UK context.

There are many instances across the world of common stewardship of natural resources.<sup>23</sup> These range from international conventions, for example agreements on exploitation of international fisheries and the more broad-ranging United Nations Convention on the Law of the Sea, through to regional multinational agreements such as the EU's Common Fisheries Policy, down to local level such as commoners' rights with respect to grazing and hay cropping on commonly-held land throughout the UK. In rural India, land owned by distant interests or else of contested ownership is often shared as a common property by village communities, which collaborate in the production of crops and stock, with river reaches and habitat within sight of temples effectively serving as common nature conservation areas in which hunting is expressly forbidden. Nomadic tribes, such as the Maasai of Kenya and Tanzania, have no deeply-rooted concept of land ownership but rather migrate with the availability of grazing as a pastoral community. However, at UK scale, it is difficult to see these models of landlessness or common property ideals forming a viable legal basis for the protection of public interests in land and its functions, beyond the localised, historically-rooted and generally small 'commons' that escaped the enclosure system and have endured ever since. It is also hard to see as workable or realistic the reportedly utopian ideal, advanced by some commentators, of abandonment of private property rights as a pathway to sustainable development through reversing the concentration of wealth and power in a minority.<sup>24</sup>

In order to make sustainable progress, and short of a revolution, it is pragmatic to assume that we will need to work within and progressively evolve the dominant systems that shape British culture. This is very much the sentiment behind the content, and the title, of Jonathon Porritt's book *Capitalism: As if the World Matters*<sup>25</sup> and Mark Everard's book *The Business of Biodiversity*,<sup>26</sup> and it is equally as applicable to the landowning legacy of our long

feudal past. It is certainly hard to see the British model of landowning rights transforming as dramatically as that observed for water rights and the benefits stemming from aquatic ecosystems in South Africa.

This then raises challenges relating to the ways in which private property and benefits to the public, including future generations, are balanced in decision-making, in addition to wider legal questions about rights and responsibilities.

### Tools to help safeguard public benefits

Although much British land is in private ownership, many ecosystem services produced by our landscape support public rights at a range of geographic and temporal scales (examples include production of fresh water, regulation of flooding and sequestration of climate change gases). There is strong evidence to suggest a progressive redress in the balance between private and public benefits stemming from land and its uses. There are therefore two distinct sets of rights to be respected when considering land (and landscapes, habitats and other aspects of natural resources) and its 'outputs'.

- Private rights, largely as already understood; and
- Rights to public benefits delivered by ecosystem services, which may potentially be infringed by inappropriate actions by land and resource owners and managers. These are increasingly protected by statute, but Everard and Appleby<sup>27</sup> argue that ecosystem services analyses provide a strong basis for invoking the common law to prevent damage to the common good through short-sighted and/or self-interested practices.

These publicly-enjoyed rights effectively form a set of 'commons' which are nested at different spatial and temporal scales. Examples of how these map against the MA classification of ecosystem services are highlighted in Table 1. A significant realisation arising from the development of Table 1 (acknowledging that this is a personal view that serves a largely illustrative purpose here) is that many of the public benefits are long-lasting and also beneficial at a range of geographical scales from the local to the global, as compared to the more immediately economic benefits of private service exploitation. This supports the view that there may therefore be the potential for calculation of a very substantial escalation in the scale of damages to public interests from destructive uses of the land, or conversely a greatly extended basis for arguing for an injunction on publicly-harmful land uses.

Common ownership does not imply that these public rights are no one's property, and therefore subject to 'the tragedy of the commons'. The metaphor of 'the tragedy of the commons' relates to over-exploitation by individuals to maximise personal gain as costs are borne collectively,

23 E Ostrom and others 'Revisiting the Commons: Local Lessons, Global Challenges' (1999) 284 Science 278–82.

24 C Burr 'Usufruct: End Private Property to Solve the Financial Crisis and Create Food Security' Culture Change (3 February 2009) [http://culturechange.org/cms/index.php?option=com\\_content&task=view&id=310&Itemid=1](http://culturechange.org/cms/index.php?option=com_content&task=view&id=310&Itemid=1).

25 Note 16.

26 Note 15.

27 Note 20.

leading to the progressive destruction of the common resource as witnessed by the collapse of marine fisheries, tropical forests, aquifers and other ecosystems under aggressive commercial exploitation.<sup>28</sup> Rather, common ownership identifies wider constituencies of beneficiaries whose rights need to become progressively better internalised in both common and statute law. The case of scallop fishery in Lyme Bay is reported by Everard and Appleby<sup>29</sup> as an instance of the evolution of the common law to protect public benefits from destructive exploitation by private interests, albeit that these private interests were not private owners of the affected sea bed 'land'. The Acts and agreements noted in this article are posited as evidence of the progressive internalisation of public benefits into statute law.

However, we are in a process of transition, and one in which actions in the interests of private people or enterprises in conflict with the public good are often reported in the media. Practical examples here include human rights and employment law conflicts and, very commonly seen in local media, disquiet about seemingly unjust development planning decisions including the abuse of privilege by elected officials.

As discussed above and elsewhere by Everard and Appleby,<sup>30</sup> the now well-established language of ecosystem services provides a robust and publicly understood basis for negotiation about the consequences of land use and other decisions on the rights of wider constituencies, and should serve a useful purpose if internalised transparently into tools such as SEA (strategic environmental assessment) and EIA (environmental impact assessment). It is important that the evolution of the common law also continues increasingly to accommodate the transition in dominance from private to public benefits. Scallop dredging is one of many test cases that could advance the law. New legislation also increasingly reflects equity in the distribution of the many ecosystem services provided by land and natural resources. For example, in some senses, the draft UK Marine Bill provides such opportunities for the inclusion of a broader church of interested parties in UK marine management.<sup>31</sup> The Bill allows for the creation of marine planning, after broad consultation, and formalises the environmental objectives and memberships for the new Inshore Fisheries and Conservation Authorities which will replace the current (soon to be former) sectoral regulator: the Sea Fisheries Committee.

However, above and beyond the extension of existing legal models, we have to recognise that the principle of inclusivity is embodied by this transition. 'Inclusivity' has various definitions,<sup>32</sup> but can be summarised for this purpose as giving a voice to all interested parties in policy-

and decision-making. If we are moving from a situation of dominant private interests towards respect for public interests, the ways that we go about framing policies and legislation and arriving at ensuing decisions must equally be subsumed within wider participative processes.<sup>33,34</sup> Recognition of public rights must necessarily mean that we have to accommodate broader stakeholders in decisions at all scales, rather than staying loyal to our historic dependence upon the views of a few selected 'experts' who often reflect relatively narrow political or special interest perspectives, effectively acting, albeit often unintentionally, as a new class of 'lords' of a feudal system. We have to find ways of including other perspectives and types of knowledge in the exercise of public policy, law and benefit valuation. Despite the rhetoric surrounding the proposed Marine Bill, as it is currently drafted it fails to deliver fully on this point. There is no obvious sanction in the Marine Bill for public authorities<sup>35</sup> which fail to follow the marine plans in their decision-making processes, and the new Inshore Fisheries and Conservation Authorities are still made up of a mixture of fishermen, conservationists and local councillors,<sup>36</sup> creating an inherent tension in the organisation and making it unlikely that purely environmental measures will receive a fair hearing.<sup>37</sup>

The need for truly inclusive dialogue was implicit in the transition of water management in South Africa from rights-based to interest-based bargaining, which provides a model for building inclusivity into our own British transition. A key aspect of the South African paradigm shift entailed recognition that the allocation of entitlement to use water is essentially a social process of bargaining. Rights-based and interest-based processes, well documented in the industrial stakeholder relations literature and increasingly in the natural resources management literature,<sup>38,39</sup> are markedly different in character and have implications for the human, financial, legal and technological resources committed to the process. Significantly, this necessarily entails creation of consensual frameworks, and possibly also revisions of institutional arrangements to accommodate them.<sup>40</sup>

28 G Hardin 'The Tragedy of the Commons' (1968) 162 Science 1243–48.

29 Note 20.

30 *ibid.*

31 Marine and Coastal Access Bill HL s47.

32 For example, '... an intention or policy of including people who might otherwise be excluded or marginalized, such as the handicapped, learning-disabled, or racial and sexual minorities ...' (*The Oxford Pocket Dictionary of Current English* 2009).

33 A Stirling and others 'Empowering Designs: Towards More Progressive Appraisal of Sustainability' (STEPS Working Paper 3 University of Brighton STEPS Centre 2007).

34 A Stirling "'Opening Up" and "Closing Down": Power, Participation, and Pluralism in the Social Appraisal of Technology' (2008) 33(2) Science, Technology and Human Values 262–94.

35 Marine and Coastal Access Bill HL s56.

36 Marine and Coastal Access Bill HL s147(2).

37 For a critical analysis of this sort of make up of a fisheries management body see J Eagle *Democracy and Public Participation in Fisheries Management* (British Council London 2004).

38 B Bruns 'Community-Based Principles for Negotiating Water Rights: Some Conjectures on Assumptions and Priorities' International Workshop on 'African Water Laws: Plural Legislative Frameworks for Rural Water Management in Africa' (26–28 January 2005 Johannesburg South Africa).

39 M S Hrezo, W E Hrezo 'From Antagonistic to Co-operative Federalism in Water Resources Development: A Model for Reconciling Federal, State and Local Programs, Policies and Planning' (1985) 44(2) American Journal of Economics and Sociology 199–214.

40 J Colvin and others 'Building Capacity for Co-operative Governance as a Basis for Integrated Water Resources Managing in the Inkomati and Mvoti Catchments, South Africa' (2008) 34(6) Water SA 681–90.

The UN Aarhus Convention,<sup>41</sup> adopted in June 1998, was a new kind of multinational environmental agreement that explicitly linked environmental rights and human rights. The Aarhus Convention acknowledges that we owe an obligation to future generations, which can only be protected by reflecting the views of many stakeholders in decisions relating to the environment. Binding requirements of the Aarhus Convention are embodied in recent EU Directives such as the Water Framework Directive, requiring that a wider public be engaged to deliberate from the problem identification and framing stages, through to options generation and appraisal, identification of solutions and their refinement, and into implementation and subsequent monitoring. This is at significant odds with the historic model of 'consultation' wherein 'experts' select one of a few solutions that they then pass before a narrow set of stakeholder organisations for comment, with sunk costs, vested interests and lack of consideration of alternatives often entrenching the 'favoured option' as a foregone conclusion. Conversely, broad stakeholder participation is generally now seen as leading to better and more sustainable decision-making.<sup>42</sup> Although the Aarhus Convention has been statutory for some time, and is intended to apply to the implementation of already-established legislation in signatory countries (including the UK via the EU), there remains a low awareness about the Convention and a serious shortfall in its implementation. Its requirements for comprehensive public engagement and deliberation leading to decisions remain far from widely in evidence.

As sustainability issues become ever more pressing, we may have the understanding and indeed many of the necessary legal drivers already in our hands to bolster the transition from private privilege to publicly beneficial decision-making. This may in turn inform the kinds of incentives and compulsions that we require to influence development and use decisions on privately-owned land, sensitive to our unique cultural context. The three elements of sustainability – ecology, economy and society – need to be engaged rigorously in legal, legislative, incentive and deliberative processes if we are to make a transition towards truly sustainable and equitable stewardship of our land and landscape, regardless of ownership traditions. Thinking of ecosystems as fully integrated, systemic elements of societal wellbeing may offer us means to massively expand the scope of common law to protect public wellbeing,<sup>43</sup> and the 'language' of ecosystem services reinforces this by providing a robust framework of understanding benefits and hence beneficiary interests.

Linking up the three strands of sustainability means a number of things. First, we have to be aware of ecosystems and all of the many benefits that they confer in all development and 'change of use' decisions. Secondly, social concerns need to emerge from token considerations towards truly deliberative processes, which necessitates a paradigm shift in public policy formulation and practice. Thirdly, economic thinking has to advance to embrace optimising benefits for all and not merely perpetuating an outmoded model of financial value based on the (generally) private benefits derived from land use. We propose that ecosystem services provide a robust framework for framing such a societal discourse, leading to improved governance to better safeguard public wellbeing, amenable to economic valuation methods reflecting the interests of multiple beneficiaries beyond local owners of land and the utilities and the inherent societal values of the ecosystems upon which our future depends. The UK is moving fitfully forward in this direction. However, while this remains an evident goal of much new regulation, too often the engagement process has been captured by those it is seeking to regulate. We have seen the effects of too close a relationship between the regulator and the regulated in the current banking crisis,<sup>44</sup> and indeed those of the 1980s and 1990s.<sup>45</sup> In the end, despite the endless commentary in the media, a financial crisis is far less dangerous than a crisis in global food supply or climate instability triggered by ecosystem collapse. In his alarming and informative book *Collapse*,<sup>46</sup> Jared Diamond provides a range of historic examples of the dire consequences of societies that have collapsed through destroying the common resource base upon which they were founded and sustained. We should use this new-found climate of genuine 'prudence' to look beyond obvious vested interests in the management of our land and other natural resources, raising our focus towards stewardship for more all-encompassing and long-lasting benefit. Ecosystem services provide a powerful tool to enable us to achieve this goal.

41 The UNECE Aarhus Convention: Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters at <http://www.unece.org/env/pp/>.

42 L Colbourne 'Mainstreaming Collaboration with Communities and Stakeholders for FCERM' Science Report – SC060019 Improving Institutional and Social Responses to Flooding (Environment Agency Bristol) (in press).

43 M Everard, K Capper 'Common Law and River Conservation: The Case for Whole Systems Thinking' (2004) 16 ELM 329–37.

44 D H McIlroy 'Regulating Risk: A Measured Response to the Banking Crisis' (2008) 9(4) Journal of Banking Regulation 284–92.

45 R Tillman 'Politicians and Bankers: The Political Origins of Two Local Banking Crises' (1994) 21(4) Crime, Law and Social Change 319–35.

46 J Diamond *Collapse: How Societies Choose to Fail or Succeed* (Viking Penguin New York 2005).

Table 1: Benefits potentially derived from ecosystem services, with an indication of their scale of impact

|  | MA Ecosystem service   | Potential benefits derived   | Scale of benefit  |
|--|--|--|---|
| Provisioning services  | Fresh water  | Public supply, industry and irrigation   | Catchment scale   |
|  | Food (eg crops, fruit, fish, etc)                                      | Private crop production and low intensity cropping (public or private)   | Local scale, seasonal                                       |
|  | Fibre and fuel (eg timber, wool, etc)                                  | Private or public harvesting, grazing, building materials, etc   | Local scale, seasonal                                       |
|  | Genetic resources (used for crop/stock breeding and biotechnology)     | Private or public harvesting or breeding of genetic resources  | Potential wide-scale and long-lasting benefits              |
|  | Biochemicals, natural medicines, pharmaceuticals                       | Private or public harvesting or breeding of resources  | Potential wide-scale and long-lasting benefits              |
|  | Ornamental resources (eg shells, flowers, etc)                         | Private or public harvesting   | Local, but potentially long-lasting                         |
| Regulatory services  | Air quality regulation   | Public benefits to air quality and health  | Local to medium-range                                       |
|  | Climate regulation (temperature/precipitation, GHG sequestration, etc) | Public benefits arising from climate stability   | Local and global benefits, (local long-lasting)             |
|  | Water regulation (timing scale of run-off, flooding, etc)              | Public benefits from stable flows and flood attenuation  | Catchment scale, and long lasting                           |
|  | Natural hazard regulation long (ie storm protection)                   | Public benefits from mitigating extreme events   | Localised beneficiaries, lasting                            |
|  | Pest regulation  | Public and private benefits from natural pest regulation   | Localised and enduring                                      |
|  | Disease regulation   | Public and private benefits from natural disease regulation  | Local or medium-range and enduring                          |
|  | Erosion regulation   | Public and private benefits of soil conservation and reduced siltation of waterways contributing to declining biodiversity             | Catchment-scale impacts that may be long lasting            |
|  | Water purification and waste treatment                                 | Public benefits through absorption of waste materials and improved quality of water supplies   | Catchment-scale impacts that may be long lasting            |
|  | Pollination  | Public and private benefits from natural pollination services  | Localised and enduring                                      |
|  | Cultural services  | Cultural heritage  | Public benefits from maintaining culturally important sites |
| Recreation and tourism   |  | Public benefits from amenity and private benefits from profit from tourism and recreation activities                                   | Localised to medium-range and enduring                      |
| Aesthetic value  |  | Public and private benefits provided by landscape  | Local, medium range and potentially global, enduring        |
| Spiritual and religious value                                  |  | Public benefits supported by landscape functions   | Local, medium range and potentially global, enduring        |
| Inspiration of art, folklore, architecture, etc                |  | Public benefits supported by landscape functions   | Local, medium range and potentially global, enduring        |
| Social relations (eg fishing, grazing or cropping communities) |  | Public benefits through habitat support of local communities   | Local to medium range, enduring                             |
| Supporting services  | Soil formation   | Public benefits through creation of fertile soil   | Catchment-scale, long lasting                               |
|  | Primary production   | Public benefits through productivity of ecosystems   | Local, medium range and potentially global, enduring        |
|  | Nutrient cycling   | Public and private benefits through maintenance of productive cycles, fertilising soils and metabolising potential pollutant nutrients | Catchment-scale, long lasting                               |
|  | Water recycling  | Public and private benefits through renewal of water systems   | Catchment-scale, long lasting                               |
|  | Photosynthesis (production of atmospheric oxygen)                      | Public benefits through oxygen production and carbon dioxide sequestration   | Local scale, long lasting                                   |
|  | Provision of habitat   | Public and private benefits through maintenance of characteristic biodiversity   | Local, medium range and potentially global, enduring        |