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SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES: LESSONS FROM WALES

Abstract

Sustainable Management of Natural Resources (SMNR) is essential to ecosystems resilience which itself underlines human well-being. A multi-disciplinary literature has begun to identify the governance challenges of SMNR around scale, adaptive management and collaboration. Law can play an important role in providing the architecture for SMNR, but there have, so far, been few attempts at legislative design. Wales has introduced a new operational framework for its environment agency founded on the objective of SMNR. This paper considers the successes and shortcomings of this system in addressing the key governance challenges. The paper concludes that there is much to be applauded in Wales's ambition and engagement with existing evidence and practice. The system is also based on a clear set of principles that provide clarity in the approach. Crucially, however, it has been framed as a scientifically driven process that lacks attention to issues of both accountability and the need for collaboration. From the experience in Wales, the paper identifies the issues that should be addressed in ensuring that foundational principles are supported by a robust procedural framework. This will provide valuable evidence for other countries wishing to follow in Wales's path.

Key Words

Sustainable Natural Resource Management, Ecosystems Resilience, Sustainable Development, Ecosystems Management, Ecosystems Governance, Wales.

1. Introduction

Sustainable Management of Natural Resources (SMNR) is difficult to define and inextricably connected to other equally protean concepts, such as 'ecosystems resilience', 'human well-being' and 'sustainable development'.[1] SMNR was first associated with practices in areas such as fisheries and forestry, the objective being to create a sustainable yield of a single resource. This experience highlighted the multiple challenges that arise in achieving this

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[1] These will all be discussed and explained in detail in this paper. For a detailed discussion of the competing narratives that exist around ecosystems, see further Vito De Lucia, 'Competing Narratives and Complex Genealogies: The Ecosystem Approach in International Environmental Law' (2015) 27(1) J Environmental Law 91. SMNR is clearly linked to the more popular notion of 'ecosystems management' as both are focused on achieving 'ecosystems resilience' for continued human development. There is also a tendency to conflate the terms 'management' and 'governance' for ecosystems resilience. Both involve some form of direction and the control of people or places/things. *OED Online*, Oxford University Press, June 2017, www.oed.com/view/Entry/113218. Accessed 29 September 2017. In this paper 'governance' will be used to denote action at the highest strategic level whilst 'management' will refer to activities designed to meet those aims such as, the creation of policies, plans and projects.

aim and the need to consider wider ecosystem dynamics.[2] An ecosystem is defined as 'A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit'[3]. The resilience of ecosystems depends on their ability to absorb disturbances of all kinds.[4] This is, in turn, is reliant on the diversity of species and other biological resources within the ecosystem.[5] SMNR for ecosystems resilience is, therefore, predicated on the basis that it is possible to establish 'the amount of disturbance that an ecosystem can withstand without changing its self-organized processes and structures'.[6]

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[2] Fikret Berkes and Carl Folke, 'Linking Social and Ecological Systems for Resilience and Sustainability' in Fikret Berkes and Carl Folke (eds), *Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience* (Cambridge University Press 2000) 1-2.

[3] Convention on Biological Diversity (adopted 5 June, entered into force 29 December 1993) 1760 UNTS 79 (CBD), Article 2.

[4] Olivia Woolley, *Ecological Governance: Reappraising Law's Role in Protecting Ecosystems Functionality* (Cambridge University Press 2014) 33. The term resilience was first introduced into the literature on ecosystems, in 1973, by CS Holling 'Resilience and Stability of Ecological Systems' (1973) 4(1) Annual Rev Ecology and Systematics 1.

[5] Olivia Woolley ibid 33. The UNCBD defines 'biological diversity' as 'The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems'. 'Biological resources' included 'Genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity'. Convention on Biological Diversity (n.3) Article 2.

[6] Lance Gunderson 'Ecological Resilience - In Theory and Application' (2000) 31 Annual Rev Ecology and Systematics 425, 426.

SMNR for ecosystem resilience is, at a technical level, a very exacting task because of the complexities of ecosystems. First, ecosystems defy the notion of boundaries; operating both hierarchically and at different spatial scales which are also interrelated.[7] Secondly, ecosystems include multiple components that act and react to one another at different temporal scales; and in both predictable and unpredictable ways.[8] Thirdly, ecosystems are adaptive and can be self-organising in responding to destabilizing influences.[9] The response has been to focus on adaptive processes that involve 'structured decision making, in which both the decision-making processes and institutions allow for continual learning, re-evaluation, and revision in response to new information or surprises'.[10]

SMNR also depends on identifying the most significant causes of ecosystem disturbance. Ecosystems are vulnerable to outside environmental influences,

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[7] Fred Bosselman 'What Lawmakers Can Learn from Large-Scale Ecology' (2001-2002) 17 J Land Use and Environmental Law 207, 225.

[8] Fred Bosselman ibid.

[9] This has been described as the 'science of surprise'. When managing resources such as fish and timber, it was found that targeting a natural resource for exploitation reduces its variability and 'freezes' the ecosystem instead of allowing natural change. Over the longer term this causes inadvertent changes in the functioning of the ecosystem making it more vulnerable to 'surprise'. Adaptive management is, therefore, necessary to respond to such uncertainties and to create a system feeding back relevant knowledge. The work of Hollings is explained in Fikret Berkes and Carl Folke (n.4) 11.

[10] Jan Macdonald and Megan Styles 'Legal Strategies for Adaptive Management under Climate Change' (2014) 26(1) J Environmental Law 25, 30.

such as climate change, but human action is clearly the main problem.[11]

Thus, any system for the governance of ecosystems must take account of, not just the technical challenges of ecosystem resilience, but the equally complex nature of socio-ecological interactions.[12] In particular, this has resulted in attention to the ways in which participation in decision-making can contribute to successful SMNR.[13]

Human development may provide the greatest threat to ecosystems resilience, but it is also dependent on the sustainability of natural resources. The notion of sustainable development has underlined the importance of natural resources to continued social and economic development for many years.[14] Sustainable development requires 'sustainability' in natural resource

[11] Even climate change as one of the most destabilizing forces for ecosystems is itself linked to the human impacts of development. Daniel Farber 'Separated at Birth: Addressing the Twin Crises of Biodiversity and Climate Change' (2015) 42 Ecology LQ 841.

[12] This necessitates a multi-disciplinary perspective on research in this area. Marco Janssen and others 'Scholarly Networks on Resilience, Vulnerability and Adaptation Within the Human Dimensions of Global Environmental Change (2006) 16(3) Global Environmental Change 240.

[13] For example, Bradley Karkkainen 'Collaborative Ecosystem Governance: Scale, Complexity and Dynamism Virginia' (2002-2003) 21(2) Environmental Law Journal 189. 89. On the definition of collaborative governance approaches, Chris Ansell and Alison Gash (n. 24).

[14] For example, Agenda 21 Section II which considers the need for the conservation and management of natural resources for development. Agenda 21, Report of the United Nations Conference on Environment and Development I (1992) UN Doc. A/CONF.151/26/Rev.1 (1992) 31 ILM 874, Section II.

use, or using resources at a rate that will enable them to be available to future generations.[15] More recently, the concept of ecosystem 'services' or 'benefits' has also sought to explain the significance of ecosystems resilience in economic terms. This includes: food and fuel; regulating services, such as water and air quality regulation; cultural services, such as recreation and spiritual enrichment; and the services that support all these, such as photosynthesis and nutrient recycling.[16]

Law can play an important role in developing the architecture to support new and innovative approaches to SMNR. The existing literature has considered the most appropriate means of providing for ecosystems or ecological governance;[17] and how existing legal practice addresses the problems of SMNR at both international and national level.[18] However, there have been

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[15] The most widely recognised definition of sustainable development is 'Sustainable development that meets the needs of the current generations without jeopardising the ability of future generations to meet their own needs.'. Report of the World Commission on Environment and Development GA Res 42/187, UNGAOR 42nd Session Supplement No. 49 UN doc A/42/49 (Vol I) (1987) 154.

[16] Millenium Ecosystems Assessment *Ecosystems and Human Well-Being: A Framework for Assessment* (Island Press 2003) 57. Whilst such a myopic focus on human benefit sits unhappily with many environmentalists it, arguably, has the potential to change the dynamic in the never-ending struggle to gain attention to environmental trade-offs in economic decision making. J B Ruhl 'In Defence of Ecosystem Services' (2015) 32 Pace Environmental Law Review 306, 311.

[17] Bradley Karkkainen (n.13); Olivia Woolley (n. 4) respectively.

[18] For example, Elena Blanco and Jona Razzaque *Globalisation and Natural Resources Law: Challenges, Key Issues and Perspectives* (Edward Elgar, 2011). A comparative perspective

few attempts at legislative design, the most notable exception being New Zealand's Resource Management Act 1991[19] This makes the experience in Wales significant in providing lessons about the key governance challenges of SMNR to other countries.[20]

The Environment (Wales) Act 2016 introduced a new system of SMNR for the environmental protection agency in Wales.[21] This paper will consider the successes and shortcomings of this system by analysing the way in which it has addressed the governance challenges in this regard. The paper begins with an overview of the existing multi-disciplinary literature on those

considering the legal regimes in the US, New Zealand, Canada, England and India is provided by Sandra Zellmer *Comparative Environmental and Natural Resources Law* (Carolina Academic Press, 2013).

[19] See further P A Memon, B J Gleeson 'Towards a new planning paradigm? Reflections on New Zealand's Resource Management Act' (1995) 22 Environment and Planning B: Planning and Design 109.

[20] Learning lessons from the experience of other countries is difficult, especially where the issues to be addressed are complex. Nevertheless, it is the author's view that considering the successes and pitfalls of others can only be beneficial. On the issues associated with learning lessons from the experience of other countries, see further David Dolowitz and David Marsh 'Who Learns What from Whom? A Review of the Policy Transfer Literature' (1996) 44 (2) Political Studies 343; David Benson and Andrew Jordan 'What have we Learned from Policy Transfer Research: Dolowitz and Marsh Revisited' (2011) 9(3) Political Studies 366. In the context of sustainable development, Hans Bruyninckx, Sander Happaerts, Karoline van de Brande (eds), *Sustainable Development and Subnational Governments-Policy-Making and Multi-Level Interactions* (Palgrave Macmillan 2012) ix.

[21] Wales is a country of 3 million people that is part of the UK. It has had a form of devolved government since the Government of Wales Act 1998 (n. 48-50).

governance challenges. It then considers the roots of Wales's ambition, and

the key tenets of its system of SMNR. It continues by analysing the legal

framework and drawing together evidence on the successes and

shortcomings of SMNR in Wales. The paper concludes by identifying the

lessons that can be drawn from this experience for other countries wishing to

following in Wales's path.

2. Sustainable Natural Resource Management: Governance Challenges

SMNR presents several governance challenges relating to the complexities of

ecosystems resilience in terms of scale and adaptive management, and the

need to respond to human impacts through collaborative approaches. Before

considering how these challenges have been addressed in SMNR in Wales, it

is necessary to explore the central ideas in existing literature.

2.1 Participation and Collaboration

Participatory governance emphasises the importance of democratic

engagement in decision-making processes.   It is an essential basis for

'deliberation' which many political and legal theorists believe necessary to

provide effective solutions to the complex problems facing society.[22] Although

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[22] An extensive literature exists on the nature of deliberation. Of particular note is John

Dryzek *Deliberative Democracy and Beyond: Liberals, Critics, Contestations* (Oxford

University Press 2000).

the exact nature of 'deliberation' is contested, it is generally agreed that 'Deliberation' fosters a reasoned form of communication about values, distinct from mere compromises between clashing interests and competing preferences (…)'.[23]

Participation and deliberation are closely linked to the idea of 'collaborative governance' which is described as:

> [A] governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented and deliberative, and that aims to make or implement public policy or manage public programs or assets.[24]

Collaborative governance is said to move beyond traditional approaches to participation by requiring face to face dialogue;[25] although this alone is, of course, no guarantee of a truly deliberative approach.

Participation is recognised as a foundational principle of environmental decision-making;[26] and a collaborative governance approach is thought to be

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[23] Jenny Steele 'Participation and Deliberation in Environmental Law: Exploring a Problem-solving Approach' (2001) 21(3) Oxford J Legal Studies 415, 424.

[24] Chris Ansell and Alison Gash 'Collaborative Governance in Theory and Practice' (2008) 18(4) J Public Administration Research and Theory 543, 544.

[25] Chris Ansell and Alison Gash ibid.

important from an ecosystems perspective.[27] In this context it can be significant in ensuring the inclusion of local and traditional ecological knowledge;[28] and encouraging community action to address the challenges identified.[29]

Finally, the distinction between 'collaborative governance' and 'collaborative government' or management must be noted. The latter refers to narrower arrangements that 'stress the importance of bringing public agencies together to increase the efficiency and effectiveness of public management'.[30] This can also be contrasted with attempts by public bodies to work more closely

[26] See for example, the way in which this principle has been articulated in the Aarhus Convention. Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (adopted 25 June 1998 entered into force 30 October 2001) 2161 UNTS 447.

[27] Bradley Karkkainen (n. 13).

[28] Andreew Kliskey, Lilian Alessa and Bradley Barr 'Integrating Local and Traditional Ecological Knowledge' in Karen Mcleod and Heather Leslie (eds), *Ecosystem-Based Management for Oceans* (Island Press, 2009) 145. On the way in which the CBD Ecosystems Approach aims to integrate modern science and traditional local knowledge see also Elisa Morgera 'The Ecosystems Approach and the Precautionary Principle' in Elisa Morgera and Jona Razzaque (eds), *Biodiversity and Nature Protection Law* (Edward Elgar 2017) 70, 72.

[29] This is part of a process of 'social learning'. Although it must be recognised that the meaning of social learning is itself contested and its significance in providing more effective approaches to natural resource management is difficult to measure. See further Merel van Der Wal and others 'Measuring Social Learning in Participatory Approaches to Natural Resource Management' (2013) 24(1) Environmental Policy and Governance 1.

[30] Chris Ansell 'Collaborative Governance' in David Levi-Flaur (ed) *The Oxford Handbook of Governance* (Oxford University Press 2004), 498, 499.

with voluntary and private parties in the provision of services which is an important feature of modern public service delivery.[31] These different priorities create contrasting narratives around the notion of 'collaboration' which are apt to cause confusion.[32]

2.2   Adaptive Management

Political and legal systems are traditionally predicated on the need for long-term certainty; but adaptive management requires some flexibility in decision-making processes to allow for reflection and re-evaluation based on new information. [33] Thus, at an institutional level it is important to allow decision-makers discretion to respond to general developments in scientific knowledge and their understanding of the particular ecosystems they seek to manage. Knowledge of ecosystems includes both scientific or technical information about the operation of those systems and that regarding socio-ecological interactions. This can be gained not just from investigations by institutional

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[31] See further, R A W Rhodes 'The New Governance: Governing without Government' (1996) 44(4) Political Studies 652.

[32] This has proved particularly important in SMNR in Wales. See further the discussion at n.92 below onward. It is thus as important as the conflicting narratives around ecosystems identified by Vito De Lucia (n.1).

[33] For a detailed discussion of adaptive management and the problems of governance in this respect see further Holly Doremus 'Adaptive Management, the Endangered Species Act and the Institutional Challenges of New Age Environmental Protection' (2001) 41 Washburn Law Journal 50, 52-56.

decision-makers, but a range of stakeholders at the local level.[34] The
uncertainties involved in managing for ecosystems resilience almost inevitably
lead to a desire to allow for experimentation as means of maximising the rate
and extent of 'learning' from the management process.[35]

Adaptive management and experimentalism necessitate 'framework rule-
making and revision through recursive review of implementation experience in
different local contexts.'[36] It also requires us to give institutions sufficient
flexibility in decision-making to respond to developing knowledge about the
relevant ecosystems. This can necessitate wide administrative discretion that
sits uneasily with traditional notions of accountability. These problems can be
overcome by providing consistency in the use of discretion;[37] robust
mechanisms for monitoring and reporting progress; [38] considering non-
traditional horizontal forms of accountability, such as focusing on outcomes to

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[34] See (n. 28).

[35] Holly Doremus, (n.33) 53.

[36] This point is made by Sable and Zeitlin in the context of experimentalist governance but is
equally true of any process of adaptive management. Charles Sabel and Jonathon Zeitlin,
'Experimentalist Governance' in David Levi-Flaur (ed), *The Oxford Handbook of Governance*
(Oxford University Press 2004) 169, 169.

[37]Froukje Platjouw provides a detailed investigation of the ways in which administrative
discretion challenges the objective of maintaining ecosystems integrity and how consistency
in this context may help to overcome the obstacles it presents. Froukje Maria Platjouw
*Environmental Law and the Ecosystems Approach: Maintaining Ecological Integrity Through
Consistency in Law* (Routledge 2016).

[38] This is discussed in the context of experimental governance by Charles Sabel and
Jonathon Zeitlin, (n.36).

provide accountability to stakeholders; [39] and ensuring transparency in decision-making processes.[40]

2.3   Scale

Identifying appropriate ecological boundaries for SMNR is difficult given that ecosystems operate at different spatial and temporal scales which are often overlapping. The problems of scale also increase in complexity where the attempt at management involves the full range of natural resources. [41] It is also important to consider the relationship between ecological scales and traditional political, institutional and jurisdictional boundaries which will not always be coterminous.[42] Yet, there is evidence that 'place-based'

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[39] It is widely recognised in the literature on 'governance networks' that these arrangements challenge traditional notions of 'vertical accountability' and that further attention is needed to mechanisms for horizontal accountability. See for example, Erik-Hans Klijn and Joop Koppenjun, 'Accountable Networks' in Mark Bovens, Robert E Goodin and Thomas Schillemans, *The Oxford Handbook of Public Accountability* (OUP 2014) 242.

[40] This was identified as an important issue in river basin management under the European Union Water Framework Directive. William Howarth 'Aspirations and Realities under the Water Framework Directive: Proceduralisation, Participation and Practicalities' (2009) 21(3) J Environmental Law 391.

[41] It is no coincidence, given the complexity of the task, that most legal systems for ecosystems management relate to a single resource or issue, often water quality, rather than all natural resources. See for example the comparison of water quality management and the system of Area Management at (n. 126).

[42] Bradley Karkkainen (n.13) 212.

collaborative arrangements work best where they fit with established modes of sectoral organisation and existing policy networks.[43]

Perhaps the greatest challenge from a human perspective is balancing the need for action at the local, regional and national levels. It can be argued that decentralisation is essential to effective ecosystems governance, given the importance of participation and local knowledge.[44] On the other hand, there is a tension between decentralised approaches and the need for regional and national perspectives in ensuring adherence to basic principles and standards.[45]

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[43] Judith Innes and David Boother, 'Collaborative Policy Making: Governance through Dialogue' in Maarten Hajer and Hendrik Wagenaar (eds), *Deliberative Policy Analysis: Understanding in the Network* (Cambridge University Press 2003) 33.

[44] Indeed, this is an essential tenet of the UNCBD principles of ecosystems management (n. 91).

[45] On the limitations of devolved approaches see Olivia Woolley (n. 4) 107-115.

3. Sustainable Management of Natural Resources in Wales

On gaining primary legislative powers, designing a framework for SMNR in Wales was a priority for Welsh Government. Knowledge of the social, political and environmental conditions in this small country is essential in understanding both the ambition and restraint that underline the successes and potential shortcomings of this system. [46]

Wales's ambitious approach to SMNR might be considered to reflect the innovation often associated with sub-national governments. Such governments are considered well-placed to respond to societal problems because, arguably, they have a better understanding of local conditions and there is an immediacy of impact of any issues arising.[47] Beyond this however, the political situation in Wales has also been important in shaping this agenda.

Wales has only recently witnessed the introduction of its own sub-national or regional government within the wider United Kingdom(UK) with the introduction of the Government of Wales Act 1998. Yet, to many of its people, it is a 'country' or 'nation' with its own particular history, culture and tradition and a strong minority language.[48] Nevertheless, Welsh devolution can be

[46] See (n. 20).

[47] Alan Trench *Devolution and Power in the United Kingdom* (Manchester University Press 2007) 134**.**

[48] See further on the history of Wales Gareth Jones *Modern Wales: A Concise History* (Cambridge University Press 1994).

described as 'A process and not an event'.[49] It was not until 2011, following a second referendum, that the country resolved to give the National Assembly for Wales (NAW) powers to introduce primary legislation.[50] The fact that Welsh Government has had to fight for power, and struggles to achieve public legitimacy even today, may also be viewed as a factor in creating pressure for policy divergence with England.[51]

Welsh Government's focus on SMNR can be explained by a number of factors:

- The strong links between the landscapes of Wales, its social and cultural history, and economic traditions and current trends; [52]

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[49] This is the oft quoted prediction of Ron Davies, the then Secretary of State for Wales. http://www.assembly.wales/en/abthome/role-of-assembly-how-it-works/Pages/history-welsh-devolution.aspx accessed 26 September 2017.

[50] Nevertheless, the devolved government in Wales was subject to a model of conferred powers, rather than the reserved powers model that applied in other devolved areas of the UK ie Scotland and Northern Ireland. A reserved powers model has since been introduced in Wales under the Wales Act 2017.

[51] This is author's view. Trench also notes that pre-devolution differences in policy-making and the actions of UK government are significant. Alan Trench (n.47) 133-134. The public legitimacy of Welsh Government is discussed in Roger Scully and Richard Wyn Jones 'The Public Legitimacy of the National Assembly for Wales' (2015) 21(4) J Legislative Studies 515.

[52] The designated landscapes of Wales are particularly important in this respect. This includes three National Parks and many Areas of Outstanding Natural Beauty covering a total of 24% of land. The social and cultural links to these landscapes are clearly evident in art and literature. See for example, Richard Wilson an influential painter in the neo-Romantic period

- The importance of multi-level governance approaches in this policy area;

- The constitutional duty in the original Government of Wales Act 1998 with respect to sustainable development. This has allowed Welsh Government to reconcile environmental protection with its key priority of tackling social justice.[53]

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of the early 20th century and poets such as RS Thomas who have brought these landscape to life Steven Morris 'Richard Wilson, Father of British Landscape Painting, Rediscovered' *Guardian* (London, 3 July 2014) https://www.theguardian.com/artanddesign/2014/jul/03/richard-wilson-wales-museum-landscape-nature-painting-exhibition last accessed 16 October 2017; Byron Rogers *The Man Who Went into the West: the Life of RS Thomas* (Aurum Press Ltd, 2007)). 'Landscape' is also an enduring theme in the art and literature that is created as part of the country's National and Youth Eisteddfod movement – celebrating the arts in the Welsh language. Furthermore, Wales's landscapes are a signature of its industrial past in which the natural environment has been 'mined', in every sense of the word, to create the bedrock on which the economy has traditionally been built. These scarred landscapes are now all that is left of this economic tradition, but the environment of Wales continues to be very significant to the Welsh economy, particularly in terms of water and energy production. See further the chapter on Status and Changes in Ecosystems and their Services to Society - Wales in United Nations Environment Programme World Conservation Monitoring Centre *UK National Ecosystem Assessment: Technical Report* (UNEP-WCMC 2011) 979

[53] It has been estimated that 23% of the population of Wales lives in poverty (Adam Tinson,and Tom MacInnes *Monitoring Poverty and Social Exclusion in Wales* (Joseph Rowntree Foundation 2015) and, since its inception, the National Assembly for Wales has been led by a Labour Government. Social justice has been an essential aim of this Labour

Innovation in policy-making in Wales can also be seen to relate to a broader pioneering approach that brings together evidence-based and participative policy development.[54] This is evidenced by the prolonged process of policy development, beginning with a Natural Environment Framework (NEF) and including both a Green and White Paper.[55] The aim was to take:

A truly integrated approach to the management of our environment which reflects the complexity of the way in which environmental systems interact, the value of the services they provide to society, the pressures posed by our changing climate, and the limits of natural capacity.[56]

administration and is clearly evident in its current national strategy Welsh Government *Prosperity for All, The National Strategy: Taking Wales Forward* (WG32422 2017).

[54] Matthew Quinn 'Evidence Based or People Based Policy Making?: A View From Wales' (2002) 17(3) Public Policy and Administration 29, 41. Matthew Quinn suggests that this has been facilitated by both the pressure to be different and lack of experience held by the newly formed Welsh Government (31).

[55] Welsh Assembly Government *A Living Wales – A New Framework for Our Environment, Our Countryside and Our Seas* (Consultation 2010). Welsh Government *Sustaining a Living Wales: A Green Paper on a New Approach to Natural Resource Management in Wales* (Green Paper WG13943 2012); and Welsh Government *Towards the Sustainable Management of Wales' Natural Resources* (White Paper WG19631 2014).

[56] *A Living Wales* ibid 1. The work streams arising from this were based around: building the evidence base; valuing ecosystems; strengthening partnerships; and refreshing institutional arrangements.

In developing this policy, the Welsh Government drew upon the ecosystems approach adopted under the UNCBD; the UK National Ecosystems Assessment and work on payment for ecosystem services; its own experience of the agri-environment scheme 'Glastir'; and, River Basin Strategies pursuant to the Water Framework Directive. [57] The final details of the system were also inspired by three Area Trials of local management approaches based around river basins in the Tawe, Dyfi and Rhondda areas.[58] The system of SMNR in New Zealand was also an important source of inspiration for SMNR in Wales.[59] This applies to resource planning across government, but, in the event, SMNR in Wales, was related solely to the work of the central environment agency, Natural Resources Wales (NRW).[60]

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[57] *A Living Wales* ibid 2. See further UNCBD (n. 63) and the European Union Water Framework Directive (n. 40). Further information on the UK National Ecosystems Assessment is available at http://uknea.unep-wcmc.org/ last accessed 3 October 2017 and Glastir at http://gov.wales/topics/environmentcountryside/farmingandcountryside/farming/schemes/glastir/?lang=en last accessed 3 October 2017.

[58] https://naturalresources.wales/about-us/how-we-work/natural-resource-management-trials/?lang=en last accessed 26 September 2017.

[59] *Towards the Sustainable Management of Wales' Natural Resources* (n. 55) 17.

[60] NRW was formed from an amalgamation of the Countryside Council for Wales (the nature conservation body for Wales), the Forestry Commission Wales and the Environment Agency Wales (responsible for a wide range of environmental matters including pollution control and flood defence), Natural Resources Body for Wales (Establishment) Order 2012, SI 2012/1903 (W230). This 'one-stop' shop has clear advantages in providing a holistic approach to environmental protection and increasing efficiency in regulatory terms, but the model has been criticised for failing to provide sufficient clarity between NRW's roles in pollution regulation and the protection of nature conservation Kerry Lewis 'The Framework for

NRW has significant powers to direct and control natural resource management in Wales. This includes a traditional role in regulation with respect to industrial pollution; a direct role in the management of natural resources, in relation to forestry; and involvement in educating and engaging landowners, notably farmers, and the wider public (particularly in recreational pursuits) in understanding issues related to ecosystems protection.[61] The key elements of the system for SMNR were set out in a White Paper, in 2013, as follows:[62]

- A New Duty for NRW Focused on Sustainable Management of Natural Resources and Reinforced by a Number of General Principles.

The principles of SMNR included in the Act were heavily influenced by the ecosystems approach advocated by the United Nations Convention on Biological Diversity (UNCBD).[63] The UNCBD ecosystems approach is intended to provide a framework for national and sub-national government

Environmental Regulation in Wales: Natural Resources Wales Speaks With "One Voice" - Has the Statutory Voice for Nature Been Silenced?' (2015) 17(3) Environmental L Rev 189.

[61] https://naturalresources.wales/?lang=en last accessed 26 September 2017.

[62] *Towards the Sustainable Management of Wales' Natural Resources* (n. 55).

[63] UNCBD Decision V/6 Ecosystem Approach. Without a specific basis in the Convention guidance on this approach was first adopted by the Conference of the Parties (CoP), in 2000. The ecosystems approach is defined as: a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way (para 1).

strategies for the protection of biodiversity; but, Welsh Government has gone well beyond this requirement in its approach.[64]

- A Strategic Policy Framework

This takes the form of a National Natural Resources Policy (NNRP) created by Welsh Government and informed by a new system of State of Natural Resources Reporting (SNRR) by NRW.

- An Area-Based Approach to Natural Resource Management

This was intended to provide collaboration between 'stakeholders'. The areas identified would reflect: appropriate scales and geography within

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[64] The UNCBD envisaged the role of regional governments as providing a plan for the conservation of biodiversity and sustainable use of biological resources that would be underpinned by the principles of ecosystems management and centre on the facilitation of action by local authorities. UNCBD Decision X/22 *Plan of Action on Subnational Governments, Cities and Other Local Authorities for Biodiversity*. Wales was given responsibility for biodiversity, in 2007, but must act in accordance with a framework for a shared vision for governments across the UK (Department for the Environment, Farming and Rural Affairs *Conserving Biodiversity - the UK Approach* (PB12772, 2007)). The national strategy for biodiversity in Wales takes the form of a Nature Recovery Plan, published in 2015. Welsh Government *The Nature Recovery Plan for Wales: Setting the Course for 2020 and Beyond* (2015). The Nature Recovery Plan adopts an ecosystems approach and will inform the strategic framework for sustainable natural resource management by NRW under the Environment (Wales) Act 2016. See pp.2 and 6 respectively.

Wales, the need to co-ordinate with other statutory processes and

changing policy and political circumstances.[65]

These provisions were introduced in Part 1 of the Environment (Wales) Act

2016 (the Environment Act).[66] This gives NRW a primary duty to pursue the

sustainable management of natural resources in relation to Wales; and apply

the principles outlined in this regard.[67] The objective of SMNR is defined as:

maintaining and enhancing the resilience of ecosystems and in so doing

contribute to sustainable development.[68]

SMNR in Wales does not adopt a 'whole government' approach, that is, it

does not apply a duty of SMNR to all public bodies in Wales. Nor is there a

system for ecological or ecosystems governance on a national scale. [69]

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[65] *Towards the Sustainable Management of Wales' Natural Resources* (n. 55) 24.

[66] It should be noted that the Environment (Wales) Act 2016 also addressed a wide range of issues related to environmental protection, ranging from raising charges on carrier bag use to action on climate change targets and reducing emissions and carbon budgeting

[67] Environment (Wales) Act 2016, s5.

[68] Environment (Wales) Act 2016, s3.

[69] The means of achieving such an approach is explored in-depth by Woolley at n.4 above. It is notable, however, that the Environment Act strengthened existing general duties for all public bodies to 'seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems'. The duty is also supported by a reporting mechanism and a requirement for Welsh Government to publish lists of living organisms and types of habitat which in their opinion are of principal importance for the purpose of maintaining and enhancing biodiversity. Environment Wales Act 2016, s7. These duties were not new but strengthened those already in existence under Natural

Instead, NRW works within a broader governance framework for sustainable development created by the Well-Being of Future Generations (Wales) Act 2015 (Future Generations Act).[70] The Future Generations Act provides all public bodies in Wales with a duty to 'carry out sustainable development'.[71] This is supported by a requirement to create 'well-being objectives' with the aim of maximising the contribution of these bodies to seven statutory well-being goals. These relate to the improvement of economic, social, environmental and cultural well-being in Wales. [72] One of these goals is a 'Resilient Wales' or:

> A nation which maintains and enhances a biodiverse natural
> environment with healthy functioning ecosystems that support social,

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Resources and Environment Act 2006, s40. This was a key recommendation of the Assembly's Sustainability Committee inquiry into biodiversity. National Assembly for Wales Sustainability Committee *Inquiry into Biodiversity in Wales* (NAW 2011).

[70] See further Haydn Davies 'The Well-being of Future Generations (Wales) Act 2015 - A Step Change in the Legal Protection of the Interests of Future Generations?' (2017) 29(1) J Environmental Law 165.

[71] Well-being of Future Generations (Wales) Act 2015, s3(1).

[72] Well-being of Future Generations (Wales) Act 2015, s4. In taking action to meeting these goals public bodies are required to consider statutory guidance. Welsh Government *Shared Purpose: Shared Future; Statutory Guidance on the Well-being of Future Generations (Wales) Act 2015* (SPFS 1: Core Guidance) (2015) This encourages public bodies to refer to a Future Trends Report published by Welsh Government under s11 of the Act (n. 113) *Shared Purpose: Shared Future*, 29.

economic and ecological resilience and the capacity to adapt to change

(for example, climate change).[73]

NRW, as a public body, must comply with the duties under the Future

Generations Act as well as working within the framework for SMNR provided

by the Environment Act. It was suggested during the passage of the Bill that

there may be a possible conflict between these duties.[74] Should NRW's

central purpose to pursue SMNR be made subordinate to its duties under the

Future Generations Act it could put human well-being before the achievement

of ecological resilience.[75] For example, flooding protection measures in

pursuit of social and economic well-being might be taken at the expense of

the protection of endangered species or habitats.[76] The definition of SMNR in

the Environment Act clearly puts ecological resilience before well-being

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[73] Well-being of Future Generations (Wales) Act 2015 s4.

[74] The Government rejected an amendment at Stage 3 to focus the role of NRW on the 'Resilience goal' rather than all seven statutory well-being goals. National Assembly for Wales 26 January 2016 Deb 16:08-16:12.

[75] Andrea Ross and Agne Zasinaite have also noted the problem of conflicts between general duties in relation to sustainable development and those applying in existing specific regulatory contexts, concluding that more thought should be given to the alignment of these. See further Andrea Ross and Agne Zasinaite 'The Use of Presumptions and Duties in Sustainable Development Equations: Promoting Micro-Renewables and Preserving Historic Buildings' (2017) 29(2) Environmental L Rev 93.

[76] It is notable in this regard that the only one of the five ways of working for promoting the well-being of future generations that is not included in the principles of SMNR is 'integration'. This is essential in ensuring that there is no trade-off between ecosystems resilience and other well-being objectives. (n.87).

objectives.[77] On the other hand, the duty to carry out sustainable development is unqualified whilst the duty to pursue the SMNR is subject to the requirement that this must be achieved only to the extent that it is possible within the 'proper' exercise of NRW's functions. [78] It could be argued that the proper exercise of NRWs functions includes meeting its obligations under the Future Generations Act.

Perhaps most importantly, it could be argued that NRW's duty under the Future Generations Act to take 'reasonable steps' to meet their well-being objectives should trump its general purposive duty with respect to SMNR.[79] However, there is likely to be judicial reference to the decision-making of public bodies where legislation refers to 'reasonable steps'.[80] Furthermore, any potential conflict can be overcome by ensuring that SMNR will be essential in taking steps to meet NRWs well-being objectives. Indeed, this is

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[77] SMNR is defined as 'Maintaining and enhancing the resilience of ecosystems a*nd in so doing* contribute to sustainable development'. Environment Wales Act 2016, s3.

[78] Well-Being of Future Generations (Wales) Act 2015 s3 and Environment (Wales) Act 2016 s5 respectively. For a discussion of the different types of general purpose duties that may be imposed on an organisation and their relative strength in the context of sustainable development, see Andrea Ross, *Sustainable Development Law in the UK: From Rhetoric to Reality* (Routledge 2012) 187-193.

[79] It has also been suggested in the context of 'outcome' duties under the Climate Change Act 2008 that these could trump general purposive duties. Christopher Reid 'A new sort of duty? The significance of "outcome" duties in the Climate Change and Child Poverty Acts' 2012 PL 749, 764-765.

[80] Haydn Davies 'The Well-being of Future Generations (Wales) Act 2015: Duties or Aspirations?' (2016) 18 Environmental L Rev 41, 49-50.

the approach taken by NRW in devising its first statement of well-being objectives which are clearly focused on the role of ecosystems resilience in supporting human well-being.[81]

3.1 The Importance of Principle in SMNR

The system of SMNR in Wales is based on a set of principles enshrined in the legal framework. Principles of SMNR are in their relative infancy, but principles have long been significant to the development of environment law.[82] Environmental principles connect the law to foundational ideas and help to 'make sense of the doctrinally disparate, factually complex, and often policy driven nature of environmental law.'[83] Principles such as prevention, precaution and participation are now widely understood as essential to environmental law, even if there is some disagreement as to their exact

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[81] For example, it highlights SMNR solutions and ecosystems resilience in meeting its objective of reducing the risk to people and communities from environmental hazards like flooding. See further Natural Resources Wales *Managing Todays Natural Resources for Tomorrow's Generations: Well-Being Statement 2017/2018* (2017), 11 and 14. This approach is also supported in the Minister, Carl Sargent's, statement during the Stage 2 Committee Session on the Bill that 'The intention of Part 1 has always been to ensure that managing our natural resources is more sustainable. This would contribute to all of the seven wellbeing goals, which were supported through the Assembly when we were creating the wellbeing of future generations Act.' National Assembly for Wales Environment and Sustainability Committee 26 November 2015, Committee Transcript, para 32.

[82] Elizabeth Fisher, Bettina Lange and Eloise Scotford *Environmental Law: Text Cases and Materials* (Oxford University Press 2013) 401.

[83] Fisher ibid 413.

definition.[84] Unlike the principles of SMNR in Wales, however, these do not have a concrete foundation in UK law.[85]

In Wales, the Future Generations Act also requires all public bodies to act in accordance with the 'principle of sustainable development'. This is defined as 'acting in a manner which seeks to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs'.[86] In order to do so, these bodies must adopt five 'ways of working': thinking long-term; taking preventive action; integration; collaboration; and involving others.[87] This provides an important context for the principles of SMNR in Wales.

There are nine principles of SMNR in Wales that include three key elements. [88] First, they set out the requirement to consider a precautionary approach and specific issues relating to ecosystems resilience, i.e., diversity between and within ecosystems; connections between and within ecosystems; scale of

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[84] For a full exploration of the nature of environmental principles in international law see further Phillipe Sands, Jacqueline Peel, Adriana Fabra and Dr Ruth Mckenzie *Principles of International Environmental Law* (Cambridge University Press 2012).

[85] These principles currently provide the basis for European Union law on environmental protection as they are expressed in the Treaty on the Functioning of the European Union, Article 191. The continuing application of these principles in the UK has, however, been placed in some jeopardy by the advent of Brexit.

[86] Well-being of Future Generations (Wales) Act 2015, s5.

[87] Well-being of Future Generations (Wales) Act 2015, s5. These are described as 'ways of working' in the guidance on this Act *Shared Purpose: Shared Future* (n. 72).

[88] Well-being of Future Generations (Wales) Act 2015, s4.

ecosystems; and their condition. Secondly, they address the essential governance challenges of SMNR around collaboration and participation, adopting appropriate scales for action and managing adaptatively.[89] Thirdly, to ensure alignment with the five ways of working under the Future Generations Act, the principles for SMNR include the need to take preventive action and think long term. Also linking the SMNR and Future Generations agenda is the reference to the 'benefits' as well as the intrinsic value of natural resources.

The principles of SMNR in Wales are closely related to those adopted as part of the ecosystems approach advocated by the UNCBD.[90] Drawing on the experience of the UNCBD certainly makes sense, but it is notable that there was no discussion in the Green and White Papers about the relative merits of the UNCBD approach or exactly how this influenced the development of the principles of SMNR in Wales. It is not clear, for example, why the principle of decentralisation in the UNCBD was rejected. [91]

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[89] Well-being of Future Generations (Wales) Act 2015, s4.

[90] (n. 63).

[91] UNCBD Ecosystems Approach ibid Principle 2. This states that 'Management should be decentralized to the lowest appropriate level'. The rationale for this principle is that 'decentralized systems may lead to greater efficiency, effectiveness and equity'. The principle of decentralisation may have been rejected, in Wales, because of the need for a strategic national framework to guide action (n. 45). One way in which the principles in the Environment Act go beyond those in the UNCBD by making the need for adaptive management more explicit. This may be attributed to increasing recognition of the importance of adaptive management in this context.

The principles of SMNR in Wales also highlight the problems that can arise from competing narratives around collaborative governance.[92] Public participation is an established principle of environmental law and an essential element of collaborative governance.[93] In the original Bill the principles of SMNR referred to 'collaboration and co-operation', but did not specifically mention 'participation'. Stakeholders were concerned that this would be insufficient to ensure broad engagement in decision making.[94] As noted above, there are two conflicting narratives around 'collaboration'. [95] One suggests that there should be wide stakeholder involvement in decision-making whilst the other focuses only on public sector co-operation. The distinction between these narratives is reflected in the development of the proposals for SMNR in Wales in both the Green and White papers[96] The difference between these two concepts is evidenced in the distinction between 'involvement' and 'collaboration in the 'five ways of working' under the Future Generations Act.[97] The significance of this distinction, in the context of SMNR, was eventually recognised in an amendment to the

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[92] See (n. 30-31)**.** This may be viewed as important as the competing narratives around ecosystems themselves as outlined by Vito De Lucia (n. 1)**.**

[93] See (n. 26).

[94] See discussion in the National Assembly Environment and Sustainability Committee *Environment (Wales) Bill Stage 1 Committee Report* (National Assembly for Wales Commission 2015), 25.

[95] See (n. 30-31).

[96] On the references to stakeholder participation in the Green Paper, for example (n. 121). On the White Paper (n. 55) 20-35.

[97] (n.87). The final legislative framework for Area Management also supports this view see discussion at (n. 125)**.**

Environment Bill to include a principle of 'participation' as well as 'collaboration'.[98]

The development of principles of SMNR in Wales is, generally to be welcomed, but the way in which these principles are given effect in the procedural duties under the Environment Act is also significant. This relates both to the framework for strategic policy-making and its implementation in the system of Area Management.

3.2 From Principle to Procedure: the Strategic Policy Framework

The strategic policy framework for SMNR in Wales is set out in a National Natural Resources Policy (NNRP).[99] This is informed by an annual State of Natural Resources Report (SNRR) produced by NRW.[100] The role of the SNRR is essential in providing an assessment of the state of natural resources in Wales.[101] This must involve reflecting on the extent to which

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[98] Minister for Natural Resources: Response to Stage 1 Report. Letter dated 4 November 2015

http://www.senedd.assembly.wales/documents/s45756/Minister%20for%20Natural%20Resou rces%20Response%20to%20Stage%201%20Report.pdf last accessed 16 October 2017.

[99] Environment (Wales) Act 2016, s9; NNRP Welsh Government *Natural Resources Policy* (WG31033 2017).

[100] Environment (Wales) Act 2016, s8; Natural Resources Wales, *State of Natural Resources Report* (2016).

[101] Environment (Wales) Act 2016 s8(1). However, see further the discussion about the limitations of the SNRR in monitoring and reporting on progress (n. 143).

SMNR and the protection of biodiversity is being achieved, the sufficiency of the evidence and the main trends and factors that are affecting, and are likely to affect, the state of natural resources. [102] Thus, the legal framework provides a structural premise for institutional reflection on the challenges of SMNR that should be applauded, especially given that 'learning' is key to adaptive management.[103] In producing the NNRP, Welsh Government is similarly required to reflect upon the key priorities, risks and opportunities for SMNR in Wales.[104]

The SNRR is updated annually, in response to which the NNRP can be amended, creating an iterative process that provides flexibility for change in response to developing scientific evidence.[105] This appears to support an information-led approach to strategic policy-making, but it is notable that the relationship between the SNRR and the NNRP is founded on a duty to 'have regard'.[106] There was some initial concern that in drafting the NNRP Welsh Government failed to provide sufficient attention to the priorities for SMNR outlined in the SNRR.[107] However, the final policy identifies three strategic

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[102] Environment (Wales) Act 2016, s8(2).

[103] See the discussion at (n. 33) onward.

[104] Environment (Wales) Act 2016, s9(2).

[105] This is essential to adaptive management (n.103).

[106] Environment (Wales) Act 2016, s9(9). The legislation also includes a specific power for Welsh Government to consider anything they consider relevant to achieving SMNR in relation to Wales. Environment (Wales) Act 2016, s9(3).

[107] These concerns have been voiced by stakeholders. See for example the response of Wales Environment Link to the Consultation on the National Natural Resources Policy

priorities for Wales that are clearly in line with the principles of SMNR:

delivering nature-based solutions; increasing renewable energy and resource

efficiency; and, taking a place-based approach.[108]

Despite these innovative aspects of the new procedure it has some

shortcomings. Perhaps most importantly, an iterative process would be

expected to draw upon the 'local knowledge' that arises from 'Area

Statements', but, this is not supported in the legal framework.[109] Furthermore,

there is a lack of stakeholder rights to participation. There is no requirement

for NRW to consult with stakeholders in creating the SNRR although it is

bound by the principle of participation, whilst the NNRP is subject only to a

traditional consultation process.[110]

A final key issue is the influence of the SNNR and NNRP in wider governance

mechanisms for sustainable development. The SNNR and NNRP should

arguably be considered vital to action by public bodies in support of their

obligation under the Future Generations Act to create well-being objectives.[111]

available at http://www.waleslink.org/publications/consultations last accessed 28th September 2017.

[108] *Natural Resources Policy* (n. 99). In particular, 'delivering nature-based solutions' is considered to be essential to delivering benefits in terms of ecosystem resilience and, indeed, all the wellbeing goals in the SNRR; whilst the 'place-based' approach is closely aligned with Area Management (15).

[109] In the Explanatory Memorandum, it is made clear that the Welsh Government intends Area Statements to inform the SNRR but there is no mention of the NNRP. Explanatory Memorandum to the Environment (Wales) Bill, para. 99. See further (n. 131).

[110] Environment (Wales) Act 2016, s9.

[111] (n 72).

Yet there is no statutory requirement for public bodies to have regard to this evidence. [112] In the SNRR itself, it is suggested that its conclusions will feed into the Future Trends Report which is an important source of information for public bodies in creating their well-being objectives.[113] The NNRP is also very attentive to the need to ensure that it underlines the approach in other policy areas ranging from the economy and transport to the historic environment and education.[114] However, there is also a failure to provide recognition of these connections in the legal framework.

The NNRP creates a strategic policy framework for SMNR which NRW is required to implement by adopting an Area Management approach. Area Management is another aspect of the new legislation that is generally to be welcomed, but again falls short of expectation from a collaborative governance perspective.

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[112] In the statutory guidance created further to the Future Generations Act, for example, the only mention of the NNRP is as a source of further information. See further *Shared Purpose: Shared Future* (n. 72).

[113] SNRR (n. 100) 11. Welsh Government *Future Trends Report 2017* (WG31695 2017), see further (n. 72).

[114] *Natural Resources Policy* (n. 99) 19-29.

4. From Principle to Procedure: SMNR at the Local Level

Area Management is ground-breaking in centring on the significance of appropriate scales for local natural resource planning.[115] NRW has discretion in choosing the appropriate boundaries for action, but this must be decided with reference to the nature and extent of the natural resources in the area; the potential services those resources may provide to society; and, the possibility of achieving SMNR.[116] It is arguable that stakeholders should also be involved in identifying appropriate boundaries for Area Management, but there is no statutory duty in this respect.[117] There is also no reference to the work of Public Service Boards (PSBs). These were created under the Future Generations Act to provide for a collaborative approach to the creation of local well-being plans.[118] They include a range of public bodies, including NRW. In

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[115] Identifying appropriate scales for action has been identified as the most significant issue in local natural resource planning by the International Union for the Conservation of Nature (IUCN) in its detailed guidance on the ecosystems approach advocated by the UNCBD. Gill Shepherd, *The Ecosystem Approach: Five Steps to Implementation* (International Union for the Conservation of Nature, 2004).

[116] Environment (Wales) Act 2016, s 11. NRW must also explain in an Area Statement why a specific spatial scale has been adopted.

[117] See for example guidance from the IUCN which suggests that 'It is best to work simultaneously on defining the ecosystem area and determining the stakeholders who will support the selection and management of that area'. IUCN guidance (n. 115) 4.

[118] Well-being of Future Generations Act 2015, Part 4.

many cases they carry on the work of Local Service Boards that were well established in creating 'place-based' strategies focused on these aims. [119] There is no statutory requirement to consider the boundaries of PSBs in developing Area Management, despite the importance of existing administrative boundaries to SMNR and the close connections between this and local sustainable governance.[120] This is likely, however, to be an important consideration for NRW despite the lack of statutory recognition.

Establishing the appropriate scale for action is the first essential challenge for SMNR, the next is supporting adaptive management and providing for a 'collaborative' approach to decision-making. There is a requirement for institutional reflection by NRW on the priorities, risks and opportunities for SMNR in the Area Statement. From the outset, the Green Paper also suggested that the system of Area Management would provide new opportunities to engage with local communities and landowners on '[…] what matters to them about the places in which they live and work and their

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[119] On the background to Local Service Boards in community partnerships in Wales see further Victoria Jenkins 'Sustainable Communities in Wales: Developing a New Governance Approach to Local Sustainable Development in Wales Most Deprived Areas' in Patrick Bishop and Mark Stallworthy *Environmental Law and Policy in Wales: Responding to Local and Global Challenges* (University of Wales Press 2013).

[120] SNRM is not the only form of 'place-based' collaborative governance in Wales. There are other such partnerships that might also be relevant in Wales, for example Crime and Disorder Partnerships (CDPs). On the role of CDPS in safeguarding the local environment, see further Victoria Jenkins 'The Legal Response to Safeguarding Local Environmental Quality' (2015) 35(4) Legal Studies 648.

aspirations for the future.'[121] However, NRW has no specific duty to involve anyone in the process of Area Management.[122] Instead, reliance is, once more, placed on the principle of participation.[123] In addition, there are no further details regarding the procedural framework for collaboration, such as appropriate time-lines and relative roles of NRW and other stakeholders. In fact, the only procedural duties relating to Area Management require the sharing of information between NRW and other public bodies.[124] Once again, this highlights the importance of public sector co-operation rather than stakeholder participation as a means of providing a 'collaborative approach'.[125]

The lack of attention to participation in the arrangements for Area Management is all the more surprising given the emphasis on the experience

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[121] *Sustaining a Living Wales* (n. 55) 17. It was also made explicit that these stakeholders should include '(…) local people, land managers, farmers, foresters, planners, charities, businesses, third sector organisations and developers, key influencers and decision makers, interest groups, local authority elected Members and other community leaders.' (25).

[122] Despite calls from stakeholders to include this, *Environment and Sustainability Committee Stage 1 Committee Report* (n. 94) 25.

[123] During the Plenary Debate on the General Principles of the Bill the Minister, Carl Sargent, indicated that the principle of participation may be relied on to provide for consultation. National Assembly for Wales Deb 20 October 2015, 17:22.

[124] Environment (Wales) Act 2016, s14. Public authorities must comply with a request from NRW for information to complete Area Statements. Conversely, NRW will be required to respond to requests from public bodies for information relating to the implementation of an area statement (s15).

[125] See (n. 95-98).

of river basin management under the Water Framework Directive in creating the framework for SMNR.[126] The Water Framework Directive includes robust provisions for participation which have been broadly welcomed.[127] This experience has, however, demonstrated the difficulties in engaging stakeholders with technical information. The three 'Area Trials' also paid specific attention to public participation and adopted different methods of collecting scientific information and sharing this with the public.[128] These trials highlighted the importance of flexibility in arrangements for participation in order to account for the characteristics of, and evidence relevant to, a particular place.[129] However, basic rights to participation would not interfere with this desire for discretion in the approach.

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[126] The Area Trials of SMNR, that were carried out by NRW to inform the legislative process, were aligned with 'river basins' (n.58). However, the Area Trials extended the objectives from simply meeting water quality standards to addressing the use of all natural resources (n. 128).

[127] See William Howarth (n. 40).

[128] '[T]he Dyfi trial attempted to capture as much spatial data as possible to map both natural resources and ecosystems, and the benefits they provide. The Tawe used a mix of both formal data sets and expert opinion to inform the development of an evidence pack that could be used in discussions with stakeholders, then be added to and refined. This focused on seeking out opportunities for better management of natural resources. The Rhondda trial began by meeting and working with a wide range of partners and people in the Rhondda. Open dialogue was used to encourage discussions, knowledge sharing and creative ideas, and enabled us to build our evidence base in perhaps a less traditional, but equally fruitful way'. SNRR (n. 100) 79.

[129] SNRR ibid. Although, it also acknowledged the need to adopt some common standards on the collation and presentation of evidence.

The purpose of Area Statements and the arrangements for implementation is also crucial to the success of Area Management as a process designed to contribute SMNR. The statutory purpose of Area Statements is to facilitate the implementation of the National Natural Resources Policy (NNRP).[130] This is a 'top down' approach which makes no reference to the importance of reciprocal sharing of information between the local and national levels. [131] NRW is required to take action to respond to Area Statements and must identify other public bodies that may have a role in doing so.[132] Welsh Government can also intervene to require specific steps to be taken by other public bodies to ensure that they respond to the actions identified.[133] From these arrangements it is clear that the emphasis is on co-operation between NRW and public bodies in implementing Area Statements.[134] The broader

[130] Environment (Wales) Act 2016, s11.

[131] See discussion at n. 109 above.

[132] Environment (Wales) Act 2016, s11. Nevertheless, even public bodies that are listed in the legislation do not have a specific duty to implement Area Statements. This was a recommendation of the Environment and Sustainability Committee at Stage 1 of the legislative process. *Environment and Sustainability Committee Stage 1 Committee Report* (n. 94) 38-39.

[133] Environment (Wales) Act 2016, s12. Welsh Government must also provide guidance on the implementation of Area Statements, but only for the purposes of public bodies Environment (Wales) Act 2016, s13.

[134] Given the emphasis on the role of public bodies it is also significant that this refers to a specific list of organisations that operate only in Wales. Environment (Wales) Act 2016, s10. It excludes utility companies (although they will be subject to the general duty to have regard to the protection of biodiversity and the maintenance of ecosystems resilience Environment (Wales) Act 2016, s6(9). An amendment was tabled during the Stage 3 debate to require

implementation of Area Statements by other stakeholders depends on NRW's duty to 'encourage others to take steps to implement Area Statements', but there is little by way of further support for this in the legal architecture.[135] Finally, there is an expectation that Area Statements will feed into local level governance, including PSBs, but there is no specific legal requirement in this respect. [136]

NRW has wide discretionary powers with respect to Area Management in the following respects: establishing boundaries for action; providing the parameters for participation; and taking action to respond to the priorities, risks and opportunities identified. This raises concerns about the mechanisms for achieving accountability in this process.

3.3 Monitoring, Reporting and Accountability

Monitoring and reporting on progress is essential in providing transparency and accountability in a system of SMNR. It has been suggested that this will

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NRW to consult with water and sewage undertakers before publishing an Area Statement, but this was rejected. National Assembly for Wales 26 January 2016 Deb 16:58.

[135] Environment (Wales) Act 2016, s11.

[136] *Towards the Sustainable Management of Wales' Natural Resources* n. 55 above. During the debate on the general principles of the Bill, the Minister, Carl Sargent, also made it clear that Area Statements should 'inform wider public service delivery and the democratic governance at a local level.' National Assembly for Wales 20 October 2015 Deb 17.22.

be most effective where it focuses on key indicators of ecosystem health.[137]

However, it is not clear that this will be case in Wales. Progress on the

achievement of the broad goals contained in the NNRP will be tracked

through the use of 'National Indicators for Wales' created under the Future

Generations Act.[138] These include crude measures such as 'areas' of healthy

ecosystems defined with reference to the extent of terrestrial semi-natural

habitat, although there will be a clear measure of the status of biological

diversity.[139] The State of Natural Resources Report (SNRR) will, however,

provide the most important mechanism for monitoring and reviewing progress

on SMNR across Wales.[140] NRW is specifically required to consider the extent

to which biodiversity in Wales is being achieved in Wales;[141] but a proposal to

include statutory biodiversity targets was rejected.[142] Biological diversity is

not, however, the only measures of ecosystem health. Reporting on the

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[137] Les Kaufman et al 'Monitoring and Evaluation' in Karen Mcleod and Heather Leslie (eds) *Ecosystem-Based Management for Oceans* (Island Press, 2009) 115**,** 117-121.

[138] *Natural Resources Policy* (n. 99) 30. Welsh Government, *How to Measure a Nation's Progress? National Indicators for Wales* (WG26817 2016)

[139] 'Areas of healthy ecosystem' are to be measured initially through the extent of terrestrial semi-natural habitat, presented as losses and gains of broad habitat group by area. The status of biodiversity will be measures using the information compiled by the Joint Nature Conservation Committee for UK in this regard. See further Welsh Government, *How to Measure a Nation's Progress? National Indicators for Wales: Technical Document.* (WG26817 2016) 20-21.

[140] SNRR (n. 100).

[141] Environment (Wales) Act 2016, s8.

[142] This was suggested during the passage of the Bill. *Environment and Sustainability Committee Stage 1 Report* (n. 94) 32-33**.**

achievement of SMRN is also quite different to this. Therefore, in the first SNRR it is difficult to identify key indicators to track progress.[143] This highlights a significant problem in using the SNRR for the dual purpose of providing reflection on the challenges of SNRR and monitoring and reporting on progress in maintaining and enhancing ecosystem resilience.

Perhaps most importantly, there is no specific requirement for NRW to report on progress in implementing Area Statements.[144] This may be attributed to the fact that Welsh Government viewed Area Management as a scientifically driven, experimental approach to local natural resource management. Evidence of this arises from several aspects of the system. First, the legislation did not initially provide for the application of the process to the whole of Wales.[145] Secondly, NRW has wide discretion establish the boundaries and processes for Area Management. Thirdly, NRW has broad

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[143] This is in sharp contrast to the annual reporting mechanisms that exists for Public Service Boards, for example, with respect to their local well-being plans. Well-being of Future Generations Act 2015, s45.

[144] Although NRW must keep Area Statements under review and it may revise them at any time Environment (Wales) Act 2016, s11(6).

[145]See discussion of the importance of this requirement in *Environment and Sustainability Committee, Stage 1 Committee Report* (n. 94) 36-37. Thus, the Government tabled an amendment to this effect during the passage of the Bill. See the comments of Llyr Griffiths in Stage 3 debate (n. 134) 16:59. The duty to provide such an approach to the whole of Wales does not mean that this will be achieved at the same time and it is likely that a smaller number of areas will be identified in the initial stages.

powers to carry out experimental schemes, including the ability to exempt or relax the statutory responsibilities of NRW. [146]

The lack of attention to mechanisms for monitoring and reporting on progress and accountability is one of the central shortcomings of the new legislation. Even a process that allows decision-makers room for reflection and experimentation must include clear mechanisms for accountability. Along with the lack of rights and duties to support a collaborative governance approach, these shortcomings may undermine the future success of SMNR in Wales.

5. Sustainable Management of Natural Resources in Wales: Successes and Shortcomings

Ecosystems science may be a relatively new field, but there is now clear evidence of the need to attend to scale and adaptive management in SMNR.[147] These concerns are clearly reflected in the principles of SMNR in Wales and the new legal architecture supports two key features in this regard. First, it creates 'space' for institutional self-reflection on these challenges; and, secondly, it requires an area-based approach to the implementation of policy objectives. The system thus provides a sound basis for addressing the

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[146] Environment (Wales) Act 2016, s22. Furthermore, few safeguards were adopted in this regard in the original proposals, but the framework was significantly strengthened during the passage of the Bill. The system now requires: the consent of Welsh Government; consultative measures with those likely to be affected; and self-monitoring and reporting on the result of the scheme.

[147] (n.10).

demands of SMNR. However, in attempting to create flexibility for NRW to operate this regime insufficient attention has been given to issues of monitoring and reporting on progress.

SMNR should also be attentive to socio-ecological interactions and it is generally agreed that this should lead to collaborative governance approaches.[148] The legal regime for SMNR in Wales includes both principles of participation and collaboration and requires reflective processes of policy development that focus on human impacts on SMNR. However, the principle of participation has been relied upon at the expense of basic rights to participation. Notwithstanding NRW's current desire to embrace a participative approach to Area Management such a principle is, arguably, no substitute for such rights. There is also little by way of a procedural framework to support a collaborative governance approach. Perhaps most importantly, there is a failure to provide clear structures to ensure that evidence from Area Management is fed into policy-making at the national level. This also puts in jeopardy the good work that has been done on creating a legal architecture to reflect the significance of scale and adaptive management in SMNR.

It appears that SMNR in Wales has been framed as a technical process for NRW to operate. This is perhaps not surprising given that early approaches to natural resource management focused on the scientific challenges and the conventional conception of an environmental regulator as 'scientific'

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[148] (n. 13).

agency.[149] A collaborative governance approach presents a significant challenge to an environment agency such as NRW. Involving local communities on equal terms with public bodies in 'place-based' collaborative governance arrangements is no easy task.[150] Unlike other environmental regulators, NRW has experience of land management which require it to work with stakeholders.[151] Nevertheless, these different aspects of the work of the agency have only recently been brought together. Putting SMNR into operation will, therefore, require NRW to reflect on how it can improve its skills as an organisation in working collaboratively with a wide range of stakeholders in Area Management.[152]

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[149] Although, there has been increasing recognition among environmental regulators of the need to involve industry and the public in establishing environmental standards and risk-based approaches. See further Neil Gunningham 'The New Collaborative Environmental Governance: The Localisation of Regulation' (2009) 36(1) J Law and Society 145.

[150] Scott Burris, Michael Kempa and Clifford Shearing 'Changes in Governance: A Cross Disciplinary Review of Current Scholarship' (2008) 41 Akron L Rev 1, 51. There is also a danger that powerful factions within local communities will dominate in expressing community issues (62).

[151] NRW directly manages 7%of land in Wales and influences the management of protected areas which cover 23% of the land in Wales. Natural Resource Wales *Communities and Regeneration Enabling Plan 2015-2020* (2015) 7.

[152] The organisation already has in place, for example, a communities' regeneration plan. This suggests that NRW should focus on working with other organisations and groups that have more experience of community engagement and development work *Communities and Regeneration Enabling Plan 2015-2020* ibid 7. Developing such work will also be particularly difficult for NRW in the current situation of declining resource. See for example 'Fish Stocks not Being Protected by Natural Resources Wales *BBC News* 19 October 2017; 'Funding Concerns over Natural Resources Wales' *BBC News* 22 October 2014.

The tension between technical and participative approaches to SMNR will always be challenging. Nevertheless, the lack of attention to collaborative governance approaches in Wales is particularly disappointing given that Welsh Government prides itself on a tradition of consensus-based decision-making and inclusivity.[153] It is notable that a collaborative governance approach is evident in the legal framework for PSBs in support of local well-being objectives.[154] This might suggest that SMNR is deliberately distinguished as a 'technical process' to provide baseline evidence for action on sustainable development, but the latter is not supported in the legal architecture.

The relationship between the system of SMNR in Wales and the governance framework for sustainable development is essential. Sustainable development is often the dominant narrative in environmental discourse.[155] In Wales, this has been translated into the notion of the 'Well-Being of Future Generations' which has been significant in allowing the National Assembly for Wales to reconcile its political priorities in terms of social justice with attention to environmental protection.[156] Thus, In Wales, it is 'ecosystem services' that

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[153] It has been suggested that the values of inclusiveness, transparency and partnership have been central to the Assembly since its formation. Richard Rawlings *Delineating Wales: Constitutional, Legal and Administrative Aspects of National Devolution* (University of Wales Press 2003) 3.

[154] (n. 118).

[155] See further Vito De Lucia (n. 1).

[156] (n. 53).

has provided the most important 'hook' or narrative to use in Welsh Government's conception of SMNR.[157]

The system of SMNR in Wales has highlighted the synergies between the concepts of sustainable development and ecosystems resilience, but also unearthed some controversy. It might be argued that SMNR in Wales will be fundamentally constrained by the focus on human well-being in the sustainable development governance regime in Wales.[158] On the other hand, the experience in Wales proves that the goals of SMNR can be made relevant to a broader concern for human well-being. Greater transparency is, however, needed in outlining the relationship between the new management structures for SMNR and the governance systems for well-being under the Future Generations Act.

Analysing the system of SMNR in Wales reveals some important lessons not just for those who might seek to emulate this regime, but Welsh Government itself. The science behind SMNR is still developing and approaches to governance in tackling the challenges of ecosystems resilience have only just begun to be understood. The development of the legal architecture in Wales should be viewed as a dynamic process – much like devolution itself. These are also uncertain times for environmental protection in the UK with the

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[157] Carol Rose 'Demystifying Ecosystems Management' (1997) 24 Ecology LQ 865.

[158] On different interpretations of the notion of the notion of sustainable development see further Andrea Ross 'Modern interpretations of sustainable development' (2009) 36 (1) J Law and Society 32.

advent of Brexit.[159] Nevertheless, the new architecture for SMNR and the Well-Being of Future Generations should provide some stability through this turbulence and in forging a way ahead for the protection of the Welsh environment.[160] There is however, a need to carefully monitor the success of the regime and to consider how it might be revised in response to new information.[161]

6. Conclusions: Lessons from Wales

SMNR is fraught with complexity and an issue that policy and law-makers, may justifiably approach with caution.[162] Ambition is everything in the early stages of developing a legal framework and Wales has been courageous in attempting this task. This ambition has been underlined by a set of fortuitous social, political and environmental conditions that are possibly unlikely to be emulated elsewhere. Thus, environmentalists will have to work hard to persuade governments to take on this task. A willingness by Welsh

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[159] See further Robert Lee 'Always Keep a Hold of Nurse: British Environmental Law and Exit from the European Union' (2017) 29 (1) J Environmental Law 155.

[160] The Welsh Government has recently issued a consultation on taking SMNR in Wales further. Welsh Government *Taking Forward Wales' Sustainable Management of Natural Resources* (WG31811 2017). This includes discussion of the approaches identified in the consultation on the NNRP such as nature based solutions.

[161] This was a point made very clear by stakeholders to the Environment and Sustainability Committee of the National Assembly for Wales as its term drew to a close. See further National Assembly for Wales Environment and Sustainability Committee *Fourth Assembly Legacy Report* (National Assembly for Wales Commission 2016).

[162] Bradley Karkkainen (n. 13) 235.

Government to engage with existing and emerging principles and practice is also to be applauded. This has not proven to be easy given the complex nature of ecosystems resilience and the fact that knowledge of SMNR is still in its infancy.

Law has an important role to play in setting out both principles and processes for SMNR to address the governance challenges in terms of scale, adaptive management and collaboration. Translating the goals of SMNR to a public audience is an important aspect of legislative design and, broadly speaking, principles are a useful tool in this respect. Nevertheless, tensions can arise around the interpretation of these principles. Notably, the competing narratives around 'collaborative governance' can prove just as significant as those relating to ecosystems resilience. Some concerns may also arise around the 'fixing' of principles for ecosystems management in law given that they are not fully understood or agreed upon even by environmentalists themselves. [163] Yet, conversely, they can provide a clear focus for action and some stability in the approach to SMNR. It is also important to recognise that principles cannot be a substitute for substantive obligations. Although we should be wary of proceduralisation, there needs to be at least some attention to rights and obligations underpinning SMNR.[164]

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[163] These principles have not been created in perpetuity and can be amended, but it may be difficult to find the legislative time to do so.

[164] On the problems of proceduralisation see for example, the conclusions of William Howarth on the Water Framework Directive (n. 40).

From the experience in Wales we can identify several key issues in establishing a procedural framework for SMNR. First, is the need to outline the arrangements for identifying appropriate boundaries for action, including both 'technical' concerns and rights to participation for a wide range of stakeholders. Secondly, it is important to set out the parameters for a collaborative process of decision-making, including rights to participation and structural issues such as, appropriate timelines and the leadership role. This should also incorporate the premise for reflective processes at the institutional level and involving wider stakeholders. In addition, some indication should be given of the expected outcomes for the collaborative process in terms of policies, plans or projects (or any combination of these). Thirdly, is the need to provide an iterative process of policy development and planning which allows for appropriate interaction between governance mechanisms at different spatial scales. Fourthly, there should be robust mechanisms to ensure accountability. Any attempts to provide for flexibility and experimentalism in approaches to management should be accompanied by appropriate safeguards. Mechanisms for monitoring and reviewing progress at all spatial scales will also be essential in this regard. Finally, it is important to ensure that SMNR underpins wider governance mechanisms for sustainable development where relevant.

SMNR is an important societal goal, but one that will require innovative approaches that present significant challenges to law. For countries brave enough to tread the path of SMNR the experience in Wales now provides an international exemplar. SMNR in Wales provides a cautionary tale: ambition is

everything, but must be accompanied by an eye for detail and room for continual re-evaluation.

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