Integration and Fragmentation in Environmental and Water Laws

William Howarth, University of Kent, w.howarth@kent.ac.uk

The Rise of Environmental Integration

During the three decades of UKELA's existence, perhaps the most notable development has been the reshaping and recharacterisation of a diverse bundle of national regulatory measures as "environmental law". Certainly statutory provisions concerning water and air pollution, statutory nuisances and other public health matters can be traced back to at least the mid nineteenth century, but English laws concerning the 'environment' as a whole (as opposed to the various sectoral matters) are a fairly recent innovation. The conception that pollution of water, air and land should have something in common which calls for a coordinated regulatory approach is a momentous shift in thinking. It is a movement from disparate controls relating the tangible media of water, air and land, to the regulation of impacts on an abstract thing, the environment, which encompasses the three media, but is distinct from them. It is this transition from a sectoral (media-specific) approach to a holistic and integrated approach to regulation of our surroundings that has largely determined the shape of present day environmental law.

Integrated environmental quality laws and permitting systems may be seen as illustrative of this transition (particularly measures originating under Part I of the Environmental Protection Act 1990 and the Environmental Permitting Regulations from 2007 onwards). Matters that would have previously fallen under quite separate systems of regulatory control, subject to the jurisdiction of differently constituted regulatory authorities, have been progressively brought within the remit of bodies with cross-sectoral responsibilities and duties to address environmental emissions and impacts in a unified way. Similarly, the multitude of licensing systems relating to activities impacting upon the quality of the environment have been largely consolidated in permitting arrangements that seek to prioritise commonality in respect of administration, restrictions and enforcement. This is not to say that the movement towards integrated environmental regulation and permitting has reached a conclusive end point (far from it) but merely that integration may be seen as a principal route to modernity in environmental quality law.

Given the successful progress of integration in environmental law, it might be thought that an integrated approach to regulation might usefully be pursued in related fields of natural resource management, such as water resources management. Surprisingly, perhaps, this appears not to be the case.

The purpose of this paper is to explore the comparative lack of integration in water resources management law and to reflect upon the national resistance to international calls for an Integrated Water Resources Management approach as this relates to the regulatory dimension of water management.

Fragmentation in Water Regulation

Whilst the progression from a sectoral to an integrated approach has been a prominent theme in the development of environmental quality law, it is remarkable that the need for integration seems to have made relatively little progress in related areas, such as water management regulation. Although activities involving discharges of industrial and sewage effluent into natural waters have been brought within the environmental permitting regime, controlling effluent emissions into the aquatic environment is only one aspect of water resources management. It should be recalled that there are a range of other reasons why water-related activities may need to be regulated.

Traditionally, water regulation has tended to be utilitarian, in the sense of supporting a range of recognised water uses to secure the greatest human benefit. However, the calculus of costs and benefits is far from precise when the range of possible water uses is considered. Water resources serve as a source of potable supply for domestic use, a source of irrigation for agriculture and may serve various industrial purposes including providing hydro-power. Waters may be used for navigation, fisheries and recreation and a range of other non-consumptive uses, where water is not removed from its natural flow or location. Alongside these things, water needs to be managed to reduce flood risk and to ensure the availability of supplies under conditions of drought and scarcity. In respect of all of these diverse considerations, the discharge of industrial and sewage effluent has potentially serious implications in respect of the usability of water for other purposes.

Beyond the traditional reasons for regulating water use and management, is the more recent awareness of the ‘intrinsic value’ of the water environment and the species and ecosystems that it supports. This appreciation has provided a basis for legislation extending beyond strictly utilitarian purposes. The diverse water resource management concerns noted above have thereby acquired an ecological dimension requiring different human water uses to be managed and/or restrained to prevent unacceptable impacts on aquatic species and ecosystems.

The key point to be drawn from outlining the range of possible water uses and management concerns is that the different users may best be seen as competitors for a finite natural resource, where allocation of water to one group of users may be seen as excluding or disadvantaging others. As between the different users, the potential for incompatibility is markedly variable, with consumptive uses necessarily reducing water availability for other uses. However, the element of competition between uses is almost invariably present. Hence, an overall objective in water management may be seen as that of determining priorities between competing water uses and ecological needs.

As regards the law concerning water management, therefore, the overall objective should be to provide a system by which competing claims to different kinds of water use can be transparently evaluated and ranked according to comprehensive overall criteria within a unified and harmonised regulatory regime. Is this possible under present national water legislation? The answer seems to be in the negative or, at best, only to a limited extent. Within water law, sectoralism prevails. Issues are consigned to different legal categories which are separately regulated and largely

unrelated to each other. The idea that the natural resource of water should be regulated as an integrated whole seems to have made no major inroads into the statute book.

Integrated Water Resources Management

The lack of coordination in water legislation may well reflect the piecemeal way that national law has developed over time, but given the comparison with the development of environmental law (discussed earlier) it is notable that water law has continued to be so unresponsive to international calls for more integrated management of water resources.

Since the Rio Earth Summit Conference on Environment and Development in 1992, environmentalists have perceived the overall international objective of their endeavours as the need to make progress towards 'sustainable development'.[1] Similarly, many environmental lawyers may regard their role to act in furtherance of this global imperative. Whilst difficulties with the interpretation and application of the key concept abound, there seems to be a degree of consensus that environmental law, in all its diverse forms, is concerned with the use of law in progressing towards the realisation of sustainable development.

However, a closer reading of the documentation from the Rio Conference shows that a more exacting route towards sustainable development is envisaged in respect of the water environment: "Integrated Water Resources Management" (IWRM).[2] The origins of IWRM as an imperative for the water environment are to be found in Agenda 21 from the 1992 Rio Conference. This provides that:
*"*the widespread scarcity, gradual destruction and aggravated pollution of freshwater resources in many world regions, along with the progressive encroachment of incompatible activities, demand integrated water resources planning and *management".*[3]
Remarkably though, IWRM was not actually defined in Agenda 21 or in any of the agreements reached at the Rio Conference and it was not until some years later that a generally accepted definition was formulated:
"IWRM is a process which promotes the co-ordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of *vital ecosystems".*[4]

---

[1] See Rio Declaration on Environment and Development, available at http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm/ (Accessed 17 August 2018, as are other electronic sources referred to below) and see A. Ross Robertson, 2012, Sustainable development law in the UK: from rhetoric to reality? for a useful discussion of the national legal implications of this concept

[2] For a useful general discussion of the concept of IWRM and it is interpretation in different jurisdictions see S. Hendry, Frameworks for Water Law Reform (2015) Ch.2.

[3] See United Nations, United Nations Conference on Environment and Development Rio de Janerio, Brazil, 1992, Agenda 21 Chapter 18 available at: http://sustainabledevelopment.un.org/content/documents/Agenda21.pdf. See also the reaffirmation of the need for IWRM in the World Summit on Sustainable Development (2002) Plan of Implementation, Report of the World Summit on Sustainable Development, A /Conf. 199/20 para.26 available at http://un-documents.net/jburgpln.htm.

[4] Global Water Partnership – Technical Advisory Committee, Integrated Water Resources Management: Background Paper 4, Stockholm (2000) at https://www.gwp.org/; and see M. Rahaman

So defined, the intuitive attraction of IWRM lies in the proposition that the aggregate of benefits (economic, social and environmental) will be at its greatest where the degree of integration of water management is highest. In relation to the water environment at least, this means that the optimum route towards sustainable development is through application of IWRM. Similarly, in respect of water resources regulation, as a key aspect of water management, the greatest possible degree of legislative integration should be the ultimate aim.

Not everyone is entirely convinced of the merits of IWRM as a guiding concept for water management and regulation. Not least problematic is the difficulty of quantifying and making trade-offs between the different kinds of benefits (economic, social and environmental) and the commensurability between these raises seemingly insuperable challenges. This has prompted some sceptical views as to the practical value of IWRM.[5]

It is difficult to deny that, "integration" seems to carry a highly favourable, if opaque, emotive meaning. It acquires this from its antonyms. "Integration" is the opposite of "disintegration", "disorganisation" or perhaps "chaos" (things which few people could be in favour of) and therefore it must be seen as 'a good thing'. On the other hand, "integration" begs the question, integration of what? Integration of factors A, B and C, might equally be seen as separating or distancing these from factors D, E and F. What counts as 'integration' of some elements might equally be seen as involving the disintegration of others. Everything depends upon the scope of the 'integration' exercise and what it includes and excludes.[6]

This ambiguity in the scope of integration may well be at work within the concept of IWRM. Although the Global Water Partnership definition, cited above, characterised IWRM as "a process which promotes the co-ordinated development and management of water, land and related resources" the extent of the integration process is seriously opaque. Indeed, it is difficult to conceive of any kind of environmental or natural resources management that is not in some way "related" to water management. If so, IWRM actually turns out to be 'integrated everything management', but this is difficult to reconcile with the emphasis that seems to be placed upon the word "water". In short, the concept of IWRM gains its attraction from

---

and O. Varis, 'Integrated water resources management: evolution, prospects and future challenges', (2005) 1(1) Sustainability: Science, Practice, and Policy 15. For discussion of how IWRM might be applied in practice, with illustrations from different jurisdictions, see Global Water Partnership, The Handbook for Integrated Water Resources Management in Transboundary Basins of Rivers, Lakes and Aquifers (2012) http://www.gwp.org/Global/About%20GWP/Publications/INBO-GWP%20Transboundary%20Handbook/MGIREB-UK-2012_Web.pdf.

[5] A widely cited critique is offered by A.K. Biswas, 'Integrated Water Resources Management: Is it working?' (2008) 24(1) Water Development Management 22. For further critical observations on IWRM see M. Giordano and T. Shan, 'From IWRM back to integrated water resources management' (2014) International Journal of Water Resources Development Vol.30 No.3 p.364. Perhaps placed at the extreme end of the sceptical spectrum, in contesting the value of IWRM as a conceptual tool, P. Jeffrey and M Gearey, 'Integrated water resources management: lost on the road from ambition to realisation' (2006) Water Science & Technology Vol.53 No.1 p.1.

[6] J. G. Hering and K. M. Ingold, 'Water Resources Management: What Should be Integrated?' (2012) 8 June 2012 Vol.336 Science. Also on the definitional confusion as to the precise meaning of IWRM see N. S. Grigg, 'Integrated water resources management: balancing views and improving practice' (2008) Water International Vol.33 No.3 p.279.

an explicit appeal to coherence within determinable boundaries, whilst implicitly conceding that those boundaries are elusive.

Despite these reservations about the practicality and logic of 'integration', the idea that integrated management of water is generally beneficial has an extremely broad appeal that has commanded widespread international support as the dominant global idea in water resources management.[7] Notwithstanding this, the implementation of IWRM involves challenges across the raft of disciplines, sub-disciplines and practices contributing to diverse water management activities, encompassing politics, economics and hydrology amongst a spectrum of natural and social science inputs.[8] Not least amongst these inputs is the vital role of law in providing an institutional and normative framework to support integrated water management activities.

Progress Towards IWRM by Integrated Regulation

Despite the uncertainties and reservations about IWRM, its global importance as a means of ensuring that water management is undertaken in furtherance of sustainable development seems unassailable. Like sustainable development, however, the main difficulty is that of putting IWRM into practical effect.

Viewed from a legal perspective, the greatest conformity with IWRM might be realised where there is the maximum degree of coordination between laws and administrative requirements relating to all aspects of water management. This might involve all water-related matters being provided for under a single codifying statute. Legal powers and duties relating to water would need to be exercised by the minimum number of different regulatory bodies and subject to the least possible number of administrative and enforcement boundaries. In the real world, however, water management laws and administrative arrangements fall well short of this comprehensively unified ideal. Indeed, in practice the national law the organisation of water legislation might be seen as providing a textbook model of regulatory disintegration.

Evidence for this can be found by taking a cursory scan of water legislation on the UK Government's Legislation.gov.uk website of statutory information. A search of primary legislation under the term "water" in "Primary Legislation" produces 47 hits concerning a wide spectrum of water regulatory issues across the different jurisdictions within the UK. A search of "UK Statutory Instruments" produces "more than 200 results". The diverse range of legislative subdivisions that apply to the management of water resources is remarkable. It is also notable also that this scan of the subject area, does not encompass various water-related matters where "water" does not appear in the title of the statute, such as navigation or fisheries legislation, for example. Nonetheless, it is readily apparent that the law relating to a

[7] UN Water Report, The Status Report on the Application of Integrated Approaches to Water Resources Management (UN, 2012) and see the United Nations, International Decade for Action, Water For Life 2005-2015 web pages at http://www.un.org/waterforlifedecade/iwrm.shtml.
[8] For an interdisciplinary discussion of the foundational principles of integrated governance of water, particularly in respect of water, shortage and flood risk, see M. van Rijswick et al, 'Ten building blocks for sustainable water governance: an integrated method to assess the governance of water' (2014) Vol.39 No.5 Water International p.725.

particular natural resource (water) is spread far and wide across the statue book and the potential interrelations between the different regulatory provisions for distinct purposes are of mindboggling complexity.

What needs to be done about this? Whilst the present legislative horizon does not look promising, a longer term objective might be to consider the scope for consolidation of some of the existing provisions under a new Water Resources Act. This would replace the shell that remains of the 1991 Water Resources Act, after innumerable repeals and amendments have made it largely redundant. A new Water Resources Act could serve to place IWRM at centre of stage, across the full range of water management regulatory functions. The importance of taking a coordinated approach to duties and powers of ministers and regulatory bodies could be emphasised by general duties of a kind similar to those which impose sustainable development obligations upon public bodies.[9] Hence, there should be an explicit duty that water-management responsibilities should be exercised with full regard to the need for IWRM. This would mean that authorisations and decisions, in one sector of water management (such as water supply, wastewater treatment, flood risk management, drought management, ecological protection etc.) would need to take into account the implications for other sectors. Integrated regulatory decision-making should be the first step towards implementing IWRM and a statutory obligation in this respect would be a major stride in this direction.

[9] See s.4 Environment Act 1995 and s.39 Planning and Compulsory Purchase Act 2004 for examples of general sustainable development duties.