Regulation, Regulators, and the Crisis of Law and Government

Policy Brief

Integrated Water Resources Management and the Right to Water Security

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The Foundation for Law, Justice and Society

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Regulation, Regulators, and the Crisis of Law and Government

This programme examines the regulatory system in the wake of the global financial crisis, assessing its current weaknesses, the role of legislative and judicial bodies, and identifying measures for future reform of both markets and regulatory regimes. It aims to shed light on the recent failures of regulators, often captive of the very industries they are meant to regulate, and examine ways to improve the accountability and effectiveness of the regulatory system.

Executive Summary

- The purpose of this policy brief is to reflect upon global objectives for water management and the way that these relate to national concerns about water in the United Kingdom and, more particularly, England.

- This draws attention to the divergence between global calls for the integration of water management, encompassing integrated regulatory approaches, and the limited significance of this as a national legislative concern.

- The discussion seeks to question the desirability and feasibility of integrating water legislation: calls for 'greater integration' may simply mask the reality that difficult choices need to be made between competing water uses which are mutually incompatible.

- The challenges become more apparent when placed within the context of the diverse purposes of water legislation, which prompts discussion of national legal developments relating to flooding and water scarcity, and the extent to which they may be seen as a basis for a qualified 'right to water security'.

- Significantly, recent measures have placed emphasis on management options that recognize the natural character of the threats involved and the need for sustainable responses that work with nature rather than against it.

- To the extent that 'naturalization' may be seen as an appropriate response to a wider range of water management issues, the policy brief raises the question of whether naturalization rather than integration might serve as a preferable imperative for water management more generally.

Integrated Water Resources Management and the Right to Water Security

The global aim for water management

Since the United Nations Conference on Environment and Development, held at Rio de Janeiro, Brazil in 1992 (the 'Earth Summit') the global imperative for the environment as a whole, encompassing the water environment, is that progress should be made towards 'sustainable development'. This is commonly defined as 'development which meets the needs of the present without compromising the ability of future generations to meet their own needs'.[1] This raises unanswerable questions about what future generations would prefer to inherit by way of environmental goods and developmental benefits, but conveys a general sense that a forward-looking balance must be drawn between environmental, social, and economic factors in making contemporary decisions of almost any kind, from major developmental projects to matters of individual lifestyle choice.

Despite the uncertainties, the indications from the Rio Declaration and many other international agreements are that certain environmental management strategies are to be regarded as means towards the end of sustainable development. Particular weight needs to be given to the precautionary, preventative, and polluter-pays principles as mechanisms for securing progress towards sustainable development. These approaches are widely used in international, supranational (particularly European Union), and national environmental legislation, including water legislation.

More specifically, in relation to water management, the route towards sustainable development is supplemented by another facilitating principle: the idea of integrated water resources management (IWRM). The origins of IWRM as a globally agreed principle for securing sustainable development of the water environment lie in another product of the Rio Conference, Agenda 21. Chapter 18 of Agenda 21 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'.[2]

Like sustainable development, however, IWRM was nowhere defined in the agreements reached at the 1992 Rio Conference, and may (like sustainable development) owe its global endorsement to its uncertainty. Remarkably, 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'.

So defined, the intuitive attraction of IWRM is that its rationale is presented, seemingly, in the form of a scientific hypothesis to the effect that its aggregate benefits (economic, social, and ecological) will be greatest where the degree of integration of water management is greatest. However, this supposes that economic, social, and ecological benefits are capable of quantification and aggregation in units of a common currency. Even if a means of quantification of benefits existed, the proposition that the greatest overall benefit will be secured where water management is integrated to the greatest extent seems to beg an explanation. Is it being suggested that IWRM is an empirically verifiable hypothesis, which could, in principle, be confirmed by a comparative study of national systems water management to show correlation between integration and aggregate benefits? Alternatively, is IWRM to be regarded as an a priori truth, to be accepted as an article of faith in water management?

If sustainable development is an uncertain idea, the route to sustainable development in respect of the aquatic environment, through the concept of IWRM, seems doubly uncertain. Remarkably, however, none of these reservations seem to detract from the enthusiasm with which international initiatives to further the application of IWRM are endorsed. Despite its mysterious character (or perhaps because of this), IWRM remains the dominant global idea in water resources management.[3]

The meaning of 'integration'

At this point it might be helpful to reflect on the meaning of the word, 'integration'. A personal view is that this may be one of the most deceptive words in the English language. On first impression, 'integration' appears to carry a highly favourable emotive meaning which it acquires from its antonyms. 'Integration' is the opposite of 'disintegration', 'disorganization', or perhaps 'chaos' (things which few people could be in favour of) and therefore it must be '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' process and what it excludes.

This verbal illusion may well be at work within the concept of IWRM. Although the definition, cited above, characterized IWRM as 'a process which promotes the co-ordinated development and management of water, land and related resources' the scope of the integration process is seriously unclear. Arguably, 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 essentially boils down to '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 an explicit appeal to coherence within determinable boundaries, whilst implicitly conceding that those boundaries are illusive.

Regulatory integration of water management in practice

'Water management' may be seen as an umbrella term encompassing a range of subdisciplines and activities which contribute to the overall management activity. Amongst these is the role of law in providing an institutional and normative framework to support other water management activities. IWRM seems to imply integration both between and within the full spectrum of water management activities. This suggests that the system of water regulation that is in best accordance with IWRM is one in which there is the maximum degree of coordination between laws relating to all aspects of water management. From a legal perspective, this might be taken to mean that all matters related to water are provided for under a single 'codifying' statute and that legal powers and duties under that statute are exercised by the minimum number of different regulatory bodies.

Supposing, therefore, that IWRM entails a codified approach to water regulation as a means of maximizing integration, to what extent has water regulation actually adopted this approach? Taking the UK as an example, evidence of any purposeful attempt to codify water legislation is difficult to discern. A search for the term 'water' on legislation.gov.uk produces thirty-six results under 'primary legislation', and 'more than 200 results' in total. Although this encompasses legislation from different jurisdictions across the whole of the UK, the overall impression is that the law relating to water is spread across a large number of statutes enacted to address a wide spectrum of water management issues. For better or worse, the UK seems to be a model of regulatory *disintegration* so far as water legislation is concerned. This is not to say that different statutes are not well coordinated but, if codification is taken as a measure of regulatory integration, the UK seems to score poorly in that respect.

The European Union may not fare much better in respect of integration of water legislation. It is notable that Article 11 of the Treaty on the Functioning of the European Union provides for the integration of environmental protection

requirements in EU policies and activities. This might be taken to encompass the linking of water management with EU environmental principles, and the application of environmental protection requirements to sectors of EU activity which might impact upon water management. However, the evidence points to limited progress in this respect.

Despite the rhetoric that preceded the adoption of the Water Framework Directive (2000/60/EC), which sought to integrate the protection and sustainable management of water with other EU policy areas, the question remains as to how far this has been realized. Notably, the Directive stopped far short of a codification of all EU water legislation, since important water directives concerning Drinking Water Quality (98/83/EC), Bathing Water Quality (75/160/EEC and 2006/7/EC), Municipal Waste Water (91/271/EEC), and Agricultural Nitrates (91/676/EEC) were placed outside of the scope of the Water Framework Directive. Even within its own boundaries, it is increasingly recognized that the Water Framework Directive is limited by a lack of integration with other policies and legislation which have significant implications for the aquatic environment. The recent European Commission communication *A Blueprint to Safeguard Europe's Water Resources* (COM [2012] 673) is testimony to this. The *Blueprint* notes the prospect that 'good status' is likely to be achieved in only about half of EU waters by the 2015 deadline. It catalogues the need for greater integration with legislation covering industrial emissions, chemicals, pesticides, and pharmaceutical products; the need to confront the challenge of integrating water efficiency with flood and drought risk management; and the need to link the Directive with measures under the Common Agricultural Policy and other policies. Despite the Water Framework Directive, the *Blueprint* provides a concise survey of just how disintegrated EU water legislation actually is.

Inferences that might be drawn from this are that integration of water legislation does not seem to have been a concern to national legislators, and at EU level, where it has been a recognized as an objective to be pursued, it does not seem to have progressed satisfactorily.

The feasibility of IWRM

The feasibility of integrating water legislation is questionable, given the range of purposes for which regulation may be adopted. Traditionally, the purpose of water regulation has tended to be utilitarian, in the sense of protecting a range of recognized water uses to secure human benefit. Progressively, however, the 'intrinsic value' of the water environment and the ecosystems and species that it supports has been seen as grounds for legislation, even if this may not be justified on strict utilitarian grounds. Even within the utilitarian branch of water legislation, consumptive and non-consumptive water uses may be regulated in different ways, according to the extent to which water that is used for a particular purpose is returned to the source of supply after use. In reality, all abstractive water use is consumptive to a degree, if measured by the proportion of water returned after use as well as the alteration in the quality of water that is returned, due to contamination or heating. Nonetheless, use of water for agricultural irrigation and for some industrial processes might be placed at the 'more consumptive' end of the spectrum, followed by water used for drinking and domestic purposes, and water used for dispersal of waste as in sewage or effluent treatment activities. 'Less consumptive' or non-consumptive uses of water might be illustrated by its use in generating hydropower, in navigation, in supporting fisheries, and in enabling recreational water use. This list is far from being exhaustive of all the possible water uses, but serves to show the range and diversity of activities that water legislation may be seeking to address.

The salient point that emerges from consideration of the range of possible water uses is that different users may be seen as *competitors* for a finite natural resource; that is, allocation of water to one group of users may be seen, to varying degrees, as denying others this same resource. As between the different uses, the potential for incompatibility is markedly variable, with consumptive uses necessarily reducing water availability for other less or non-consumptive uses. The element of competition between uses is almost invariably present. Hence, a key objective for water management is the allocation of priorities between competing water uses. The proposal that

water management should be 'integrated' sheds little light upon how this exercise should be undertaken.

Water as friend or foe?

Even the conception of water management as governing the prioritization of competing water '*uses*' may actually be shown to be an oversimplification when human ambivalence towards water is weighed into the balance. Returning to the purposes for which water legislation is adopted, there is a revealing contrast between legislation which seeks to protect water from human activities (such as pollution and over-abstraction) and legislation which seeks to protect humans from water-related harms (such as water excesses or deficits that pose a threat to humans). Water legislation illustrates a curious dichotomy between hydro-filial and hydro-phobic regulatory purposes.

Over recent years, in England at least, the threat posed by water excesses and deficits has become an increasingly important water management concern, due in part to greater abnormality in hydrological conditions. Environment Agency figures show that one in five days in 2012 saw flooding, while one in four days saw drought, with massive implications for agriculture.[4] Speaking on BBC Radio 4 *Today Programme* on 4 March 2013, Lord Chris Smith, Chairman of the Agency, urged that action was vital to help 'prepare and adapt' and that 'we need to get better at coping with extremes'. On water supply concerns, a report of the Institution of Civil Engineers (*State of the Nation: Water 2012*) rated UK water security at 4 (on a scale of 1-10) and called for 'decisive and prompt action' to address a situation which it was suggested will continue to worsen if not tackled urgently. The report noted that the UK depends on global water resources for 75 per cent of its water use, through 'virtual water' used in the production of imported food and other goods, challenging the common perception of 'national water self-sufficiency'.

These indicators draw attention to greater vulnerability of people to threats arising from both excesses and deficits of water in the light of increasingly common extremes in hydrological conditions. Conceivably, 2012 might prove to be an exceptional year, but there is increasing evidence that extreme hydrological conditions are becoming more frequent. Opinions are divided on the extent to which this may reflect natural variability in weather events or whether it is attributable to human-caused climate change, but, irrespective of that debate, the evidence seems to point to extreme water conditions becoming less exceptional. Hydro-phobic concerns in water management seem to be gaining ground against hydro-filial.

Regulatory responses to water insecurity

Insofar as national legislation has been adopted to address the threats posed by water, two fairly recent legislative developments are notable. The first, addressing the threat of water deficit, establishes requirements for water resource management planning (provided for under s.62 Water Act 2003, but with the first round of plans only recently adopted). This makes provision for preparation and publication of water resource management plans by private water supply companies. These plans are intended to show how water supply obligations will be met over a twenty-five-year period, and to indicate the demand reduction and supply enhancement measures envisaged for that purpose. The water resources planning process has enabled detailed public scrutiny of water company plans. Following public inquiries, the process led to determinations that certain water company proposals, including reservoir construction projects, were not the most economically effective or environmentally friendly means of meeting future water needs. At the very least, the first round of water resources management planning has shown that proposals for major infrastructure development need to be justified by transparent economic and environmental criteria.

In respect of the threat of water excess, the Flood and Water Management Act 2010, alongside making significant changes to regulatory responsibility for flood management, introduces a risk-based approach to flooding and coastal erosion. This recognizes that alleviation of flooding risk at one location may only be achieved by

increasing risks elsewhere. The new emphasis upon 'flood risk management' signals an important shift of emphasis from the former concept of 'flood defence'. Defending land against flooding may not always be a sustainable option in the long term and, recognizing the inevitability of flooding, the aim should be to minimize the harm to which this gives rise. In some cases this might mean the abandonment of previously constructed flood defence structures and the restoration of floodplain areas to expand flood-water capacity at places where inundation will be least damaging.

Insofar as the two legislative initiatives may be seen as directed towards the common end of reducing the threat of water insecurity, they demonstrate comparable features in adopting an anticipatory style of regulation for risk management of inherently unpredictable events. Accepting that droughts and floods cannot be wholly prevented by legal means, the common aim of both legislative mechanisms is to require the anticipation of those events and to require actions that will minimize their worst impacts should they materialize. To that extent, the provisions recognize that the threats are largely of natural origin, though to an uncertain extent exacerbated by human-caused climate change. Beyond that, they may be seen as indicating a shift towards a 'naturalization' of approach in recognizing that ever greater infrastructure provision, in the forms of flood defence embankments and water supply reservoirs, may not be the most sustainable long-term option to address water insecurity.

A 'right to water security'?

To what extent do the recent developments illustrate a progression towards a greater legal recognition of a right to be protected against threats of water excess or deficit: a 'right to water security'? Some care is needed over the adoption of the language of 'rights'. A 'right' of a person to something entails a correlative duty upon another person to provide that thing, or at least a duty not to take it away without justification (as in the 'right to life'). Hence, a 'right to water' involves a duty upon government to make adequate provision for supply of water to people.

A proposed 'right to water *security*', however, differs from other kinds of human right because of the uncertain extent of the correlative duty that is envisaged. A 'right to water security' implies a duty upon governments to maintain a specified or reasonable level of protection against floods or droughts, but not to provide any absolute guarantee against these things. Clearly, there will be debates about the extent of measures needed to mitigate harm from floods and droughts, and the costs that are reasonably expended on these matters, but the 'right' may be said to exist within those parameters. The reason why water security could never amount to an unqualified right is that no duty could sensibly be imposed to provide protection against extreme natural events. Rights must, inevitably, reflect the limits of human capacity to exercise control over natural circumstances and events, and recognize the futility of imposing duties which are impossible to fulfill by those upon whom they are imposed. The 'right to water security' must be formulated in such a way as to avoid it being a 'right against nature'.

The key questions on the 'right to water security', therefore, are about the qualifications or limits to this right, or the extremities of flooding and drought which governments are subject to a duty to prevent. It is possible to expend almost unlimited amounts of money to defend land from flooding, with no guarantee that this expenditure will actually prevent flooding of the 'defended' area against a sufficiently extreme event. The problem is that flood defence projects have a high financial and environmental cost, and the longer-term implications of maintaining this kind of infrastructure may raise questions as to its sustainability. Hence, the traditional approach towards flooding, 'flood defence', is in the process of being superseded by an approach which recognizes that 'defence' is not always the best option and that it may be preferable to identify natural patterns of flooding and work with these to mitigate harm.

The counterpart of this, in relation to water resources management, is to be seen in scepticism about projects involving long-distance water transfer and widespread reservoir construction. Again, the financial and environmental costs of providing new infrastructure to address the remote possibility of extreme levels of water scarcity raise questions as to sustainability. This is particularly evident when supply enhancement options are contrasted with

demand reduction options. In both economic and environmental terms, measures such as metering, which have been found significantly to reduce demand for water, are seen to be the preferable first option. Only where supply and demand cannot be brought into a long-term secure balance by reducing demand will supply enhancement options be seen as an acceptable solution.

In summary, despite floods and droughts being placed at the opposite ends of the spectrum of hydrological events, they have common characteristics in being the main causes of water insecurity. In legislative terms this may be reflected in the comparable anticipatory approaches that have been recently adopted. Perhaps most revealingly, in relation to both water excess and water deficit, the legal responses involve an increasing preference for 'natural' solutions, which place lesser reliance upon infrastructure provision and/or involve the least intrusion upon nature, so far as this is possible. The right to water security is seen to be subject to natural limits.

The scope for greater naturalization

Although the need for naturalization in addressing water security had been recognized in some important respects, it is arguable that this approach could be pursued further. In respect of flooding, more could be done to shift resources from building and/or maintaining unsustainable defences to restoring floodplains to allow capacity for benign flooding. More stringent requirements could be imposed for 'sustainable drainage systems', whereby excess water is channelled into the ground by infiltration rather than being piped directly into watercourses to exacerbate downstream flooding. More categorical requirements could be imposed to prevent development in areas that cannot be sustainably defended, taking into account the cumulative effect of developments and the long-term trends in extreme weather events.

With regard to water resources management, more could be done to shift the balance towards demand management and away from supply enhancement. Specifically, this might involve the formalization of progressively ambitious water consumption reduction targets as water supply planning objectives. In accordance with this, water metering would need to become compulsory in all areas likely to suffer from water scarcity. Unsustainable levels of abstraction from watercourses could be addressed more swiftly and categorically, with water companies being obliged to find less ecologically damaging alternatives.

So far as economic growth is concerned, the unpalatable aspect of furthering naturalization in the directions that have been suggested is the fact that development and land use must take place within environmental limits. Development in areas vulnerable to flooding and development without regard to long-term water resource availability is not compatible with respect for the right to water security, even in its most qualified form.

Concluding observations

Despite its wide international endorsement, this policy brief has shown 'integration' to be an unhelpful imperative for water management, since it offers no solutions to the conflict caused by competing claims to water use. The problem is compounded by the fact that water management is not merely about resolving beneficial use entitlements. There is a distinct responsibility to address situations in which water is in deficit or excess and where water management may mitigate a threat to humans. Insofar as there should be a 'right to water security' against these threats, that right must be qualified to recognize their unpredictable characteristics and the limits of human action in the face of extreme natural events. Recent national legal developments may be seen as illustrating a significant shift towards naturalization, which may provide the foundation for a more sustainable approach to management of water threats and a feasible basis for a qualified right to water security. Although 'naturalization' may be initially manifested in a rejection of major infrastructure 'solutions' towards water threats, it is an idea with wider implications. Ultimately, 'naturalization' may come to be seen as a recognition that water management must work within the natural limits of the water environment.

A broader question raised by this discussion is whether a naturalization approach to management

of water-related threats is equally applicable to other aspects of water management, more particularly the exercise of determining priorities between beneficial use entitlements. Perhaps the increasing recognition that consumptive water uses must be subject to ecosystem requirements, a recognition that prioritizes ecocentric concerns over human uses, is illustrative of naturalization gaining ground in this area of policymaking. These developments may be seen as the first steps in a progression towards a new general imperative for water management: to meet human water needs and avoid water threats in a way which involves the minimum disruption of, or intrusion upon, the natural state of the water environment. The issues presented in this policy brief raise the question of whether naturalization, rather than integration, might serve as a better global imperative for water management.

Notes

1 United Nations (1987) 'Report of the World Commission on Environment and Development: Our Common Future', p. 43. Available at www.un-documents.net/ocf-02.htm

2 Agarwal, A. et al. (2000) 'Integrated Water Resources Management', TAC Background Paper 4, Stockholm: Global Water Partnership, p. 22. Available at www.gwp.org/Global/GWP-CACENA_Files/en/pdf/tec04.pdf

3 United Nations Environment Programme (2012) 'Status Report on the Application of Integrated Approaches to Water Resources Management', available at www.un.org/waterforlifedecade/pdf/un_water_status_report_2012.pdf

4 Environment Agency (2013) 'Britain must act now to deal with more extreme weather', Press Release, 4 March 2013, available at http://www.environment-agency.gov.uk/news/146242.aspx

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