Journal of Hydrology, Volume 519, Part C, 27 November 2014, pp. 2624-2631
DOI: 10.1016/j.jhydrol.2014.04.022

River basin management, development planning, and opportunities for debate around limits to growth

H. M. Smith[1*], K. L. Blackstock[2], G. Wall[3], and P. Jeffrey[1]

[*]Corresponding author: h.m.smith@cranfield.ac.uk, +44 (0) 1234 754853

[1]Cranfield Water Science Institute, Cranfield University, Bedfordshire, England, MK43 0AL

[2] The James Hutton Institute, Craigiebuckler, Aberdeen, Scotland, AB15 8QH

[3] Geography & Environment, University of Aberdeen, Elphinstone Rd., Aberdeen, Scotland, AB24 3UF

Abstract

Some of the latest global paradigms in sustainable water governance revolve around ideas of promoting greater integration within policy implementation processes that impact on land and water. The EU Water Framework Directive (WFD), seen by many as a 'Sustainability Directive', reflects this trend, and places particular emphasis on building linkages between water management and land use planning. This paper presents the results of a research project that examined this integrative vision in a real world setting – the emerging relationship between the WFD's river basin management planning (RBMP) framework and the development planning (DP) system in Scotland. The project's approach draws from interpretive policy analysis, and the results are based on analyses of key policy documents, as well as in-depth interviews, primarily with land use planning staff from local authorities, as well as other relevant public agencies such as the Scottish Environment Protection Agency (SEPA). The results show how an overarching political objective of 'increasing sustainable economic growth' is significantly affecting stakeholders' understandings of the RBMP-DP relationship, as well as their own roles and responsibilities within that relationship. This has created barriers to the deliberation and potential operationaisation of environmental limits to growth in the built environment, which may be skewing decision-making processes in a way that undermines the RBMP framework and its objectives of protecting and improving the water environment.

Key words: River Basin Management Planning; Development Planning; Policy Integration; Sustainable Economic Growth; Policy Analysis; Policy Framing

Published by Elsevier. This is the Author Accepted Manuscript issued with: Creative Commons Attribution Non-Commercial No Derivatives License (CC:BY:NC:ND 4.0).
The final published version (version of record) is available online at DOI:10.1016/j.jhydrol.2014.04.022. Please refer to any applicable publisher terms of use.

1. Introduction

The need to build stronger ties between land use planning and water management decisions has been recognised globally (Newson 1997; Carter et al. 2005; Mitchell 2005; Page & Susskind 2007), and this recognition is beginning to become manifest in policy instruments. One example is the European Union's Water Framework Directive (WFD). The Directive's overall purpose is to achieve 'good ecological status' for all European water bodies by 2015 through the implementation of river basin management planning (RBMP) processes in all Member States (EC 2000). The implementation of this new planning regime has required complex shifts in governance and institutional arrangements, and there has long been widespread recognition that the WFD's ultimate success will depend considerably on how effectively it interacts with the governance of land use and the development of towns and cities – referred to herein as development planning (DP) (White & Howe 2003; Carter 2007; Kidd & Shaw 2007; Howes 2008).

When the WFD became law many saw it as a turning point in European environmental policy, as it reflected a shift towards an 'ecological' approach to water management and was underpinned by principles of sustainable development and integrated management (Kallis & Butler 2001; Kaika 2003). Indeed, one of its underlying drivers was the desire to overwrite the fragmented and (in some cases) ineffective suite of directives that had previously characterised European water policy, replacing them with a single coordinated approach (Kallis & Nijkamp 2000). Similarly, integration across sectors is seen as a 'recurring and important underlying theme' (Kidd 2007 p. 161) in the concept of spatial planning, which has become a dominant theme in European planning literature (Nadin 2007; Newman 2008). Spatial planning envisions a more strategic outlook in DP (often at the regional level) and

encourages planners to have a 'wider regard' for the issues and objectives of other policy sectors – i.e. economic, environmental and social objectives (Thompson 2000; Harris & Hooper 2004). These integrative visions are broadly in keeping with wider ideals such as environmental policy integration, which calls for environmental objectives to be integrated within decision-making processes across all policy sectors, and is broadly accepted as 'essential and indispensable' to sustainable development (Lafferty & Hovden 2003 p. 2).

The extent to which such lofty conceptual ideals are being achieved is certainly debatable. For instance, critical reviews of the WFD's progress have highlighted numerous challenges that are often centred on the vast amounts of hydrological research that are needed to inform the preparation of RBMPs. There is also growing recognition that the goal of 'good ecological status' by 2015 is simply unachievable for a large proportion of European water bodies, despite the relative high profile status accorded to water management issues in many member states (Hering et al. 2010; Albrecht 2013). Furthermore, while the procedural aspects of the WFD can be considered successful (in that countries have successfully adopted river basin management plans) the extent to which these reflect an 'integrated' approach is questionable (Nielsen et al. 2013). We seek to embellish this socio-political perspective on environmental policy integration by exploring and critiquing the emerging integration between the RBMP and DP policy regimes in Scotland. Specifically this contribution shows that both regimes are underpinned by sustainability objectives and the idea of seeking balance between competing issues and interests. The first objective of this paper, therefore, is to examine how this idea of balance has been framed by an overarching aim of sustainable economic growth (SEG), and how this frame may be influencing the overall trajectory of integration between the two regimes.

In addressing this aim, this study has exposed one of the fundamental tensions at the heart of the relationship between water management and DP – i.e. the extent to which the need for improvement in the water environment can present a limit to growth and development of the built environment. The debate around 'limits to growth' was first popularised in the 1970s, as the result of a computer modelling exercise which predicted economic collapse midway through the 21st century (Meadows et al. 1972), and the idea has been frequently revisited since then (e.g. Goodland 1992; Ekins 2000; Turner 2008; Meadows et al. 2009; Bardi 2011). Within this larger debate, Ekins (1993) identified three types of potential limits on the growth of economic activity – limits to the level of economic welfare that can be derived from growth, social limits, and ecological limits. In these debates, economic growth is often intertwined with the physical expansion of the built environment, since building activity is often a key pillar of overall economic activity. It is no surprise, therefore, that a particular strand of debate within planning literature has coalesced around understanding potential ecological limits to growth in the built environment. Indeed, the notion of limits has become a vexed issue for planning, in theory and in practice, and a challenge to addressing sustainability objectives (as argued notably by Owens 1994; Owens & Cowell, 2011). For example, it has been argued that there is now sufficient evidence of environmental impact from development to conclude that such limits do exist, and though they may not be absolute, they may provide an intuitively powerful justification (from a public perspective) for planning decisions. As a result it has been argued that "ideas of 'enoughness' and 'fullupness' are likely to need explicit operationalisation in planning decisions" (Kelly et al. 2004 p. 315). Given that water resources have long been recognised as having a dual nature, providing "both an opportunity for, and a barrier against, economic development" (Mitchell 1990 p.1) it is important to consider whether impacts on the water environment (both actual and potential) could help to crystallise such concepts of

'enoughness' in a planning context. A second objective of this paper, therefore, is to contribute to this debate by exploring whether integration between the RBMP and DP regimes might create space for developing a better understanding and articulation of ecological limits to the growth of the built environment.

To achieve these two objectives, the paper begins by reviewing conceptual understandings of integration in a policy context, before briefly outlining the methodological approach adopted in the study. Section 4 then outlines key results from the study, including an overall depiction of the integrative relationship and how it functions, as well as more specific discussions of the overarching influence of SEG, and the potential to consider the water environment as a limit on the built environment. Section 5 then presents an overall discussion and conclusions.

2. Understanding integration

Since the emerging relationship between RBMP and DP, as well as the wider links between land and water management that are encouraged under the WFD, can all be characterised as processes of integration, it is useful to examine the wider analyses of integration (as a concept and a practice) that have been developed in academic literature. Several authors have tried to unpack and categorize the dimensions of integration in various policy contexts (Mitchell 1990; Jonch-Clausen & Fugl 2001; Kidd & Shaw 2007; Turnpenny et al. 2008; Derkzen et al. 2009). Their analyses show that integration efforts can have multiple aspects, such as developing holistic understandings of natural systems; developing linkages between organisations, agencies and policy sectors; developing linkages across geographic boundaries; or, broader still, linking the 'three pillars' of sustainability (economic, social and environmental). In more constructivist views, integration between policy regimes has also been described as "the development of shared understanding of issues, agendas, and

program choices" (Healey, 1999, 114), as well as a process of "negotiative problem definition" (Brand and Gaffikin 2007 p. 291).

In a policy setting, it is useful to characterise the structures and mechanisms that underpin integration as either 'hard' infrastructure (laws, rules and formal responsibilities) or 'soft' infrastructure (everyday practices, informal rules and cultures) (Vigar, 2009). It is also useful to examine how integration is used as a normative concept, as the term often "implies improvement by making whole what was previously (and mistakenly) separated" (Derkzen et al. 2009 p. 145). However, such assumptions of improvement must be treated with caution, as they can ignore the fundamental practical challenges associated with bridging entrenched differences between policy sectors – differences in knowledge, approaches and values. Similarly, in development planning, enthusiasm for integration has been described as 'well-intentioned but naïve', and initiatives to support integration often fail to appreciate the 'deep differences' between the facets they aim to unite (Owens and Cowell, 2002, p. 68). These differences present deep-seated, structural barriers to the delivery and maintenance of integrated approaches (Derkzen et al., 2009; Stead and Meijers, 2009). Therefore, there seems to be a growing appreciation, particularly in planning literature, that the zeal for integration must be tempered and critically assessed in light of the operational realities of practitioners (Newman, 2008). Additionally, there are concerns that ignoring these 'deep differences', through superficial or tokenistic efforts to support integration, can create further structural barriers. For instance, in the drive towards 'joined-up government', a strongly espoused ethos of partnership can generate consensus around abstract goals, while still legitimising the avoidance of real political value conflicts (Davies 2009). In other words, rather than diffusing conflict, integration efforts between policy actors could simply facilitate the displacement of conflict.

This potential for conflict displacement becomes particularly concerning when integration is portrayed as a mechanism for achieving sustainability objectives. It is increasingly recognised that the 'pillars' of sustainability – i.e. environmental protection, economic development, social justice – are inherently in competition with each other. Planners must inevitably seek to reconcile these tensions within their decision-making frameworks (Campbell 1996; Owens & Cowell 2001; Godschalk 2004). Likewise, analysis of WFD implementation has also highlighted that trade-offs are required in delivering sustainability (Blackstock, 2009). Such arguments are significant in that they explicitly characterise sustainability in terms of trade-offs, and step away from a 'win-win-win' approach that presumes all three objectives can be effectively satisfied. If efforts to promote integration create structures that mask or displace value conflicts, then the opportunities to debate and deliberate the trade-offs inherent in sustainability could become few and far between.

3. Methods

The methodological approach adopted in this study was rooted in interpretive policy analysis, which focuses on trying to understand the meaning attributed to policy (both in terms of how the problem is characterised and the solution developed); how these meanings are socially constructed; how any given policy will be associated with the coexistence of multiple (often ambiguous and contradictory) meanings; and how the tension between these interpretations may affect how different stakeholders approach the policy's implementation (Yanow, 2007; Puzl and Treib, 2007). The empirical work explored the emerging interactions between the RBMP and DP regimes in Scotland in order to understand how those involved in enacting the relationship interpret and respond to the 'hard infrastructure' (as defined above) underpinning integration. We also added a further

layer to this analysis by examining the influence of policy framing. Frame-reflective or frame-critical analysis is a particular strand within interpretive approaches to policy research (Rein and Schön, 1996; Daviter, 2007; Yanow, 2007). Policy frames shape how problems or goals are defined – they draw attention to certain aspects of an issue and away from others – and understanding frames helps reveal different values and interests at work.

The study explored integration at national, regional and local scales. To support the research at regional and local levels, two case study areas were selected for more in-depth analysis, which offered contrasting contexts – one (The Highlands) was predominantly rural and sparsely populated, whilst the other (Glasgow and the Clyde Valley) was predominantly urban and suburban. Data collection consisted of in-depth interviews and textual analysis, both of which are well established within interpretive policy analysis frameworks (Yanow, 2000, 2007). Twenty-seven in-depth interviews were completed (largely in 2009) with representatives from a variety of agencies involved in bridging the two regimes, including the Scottish Government, the Scottish Environment Protection Agency (SEPA), Scottish Water, local authorities, Strategic Development Planning Authorities (SDPAs), Scottish Natural Heritage (SNH) and the Forestry Commission. The interviews explored numerous aspects of the emerging relationship, including its overall structure (e.g. the roles and responsibilities of those involved, the mechanisms facilitating their interaction, etc.), its key drivers, and the main emerging challenges. The documents included in the textual analysis were largely produced by the same organisations discussed above, and included a range of recent policies, plans, and statements relevant to the two regimes, such as Scotland's first river basin management plan (RBMP), the National Planning Framework (NPF), the Scottish Planning Policy (SPP) and the most recent development plans in the two case study regions. The vast majority of the documents included were published prior to the end of 2009, with a

few published in 2010. The two datasets were consolidated using a software package designed for qualitative data management, and were analysed thematically – an iterative, multi-stage process of identifying, categorising and structuring the ideas (or themes) within qualitative data (Ritchie & Lewis 2003; Bazeley 2007).

At the time the research was conducted (2008-2010), the RBMP regime was still largely in its infancy, and the DP regime was in the midst of an extensive suite of reforms. Furthermore, because Scotland is an autonomous region within the UK, both regimes were influenced by the after-effects of devolution (i.e. the establishment of the Scottish Government) as well as the Scottish Election which took place near the beginning of the research project. As a result, the research provided a snapshot of a dynamic relationship in a rapidly evolving context.

4. Results

4.1. Arenas of interaction between the two regimes

The WFD was enacted into Scottish legislation via the 2003 *Water Environment and Water Services (Scotland) Act* (often referred to as the 'WEWS Act'), which underpins the RBMP regime. Overall responsibility for RBMP rests with the Scottish Environment Protection Agency (SEPA), which is a non-departmental public body, accountable to the Scottish Government. SEPA was therefore responsible for the preparation and delivery of the Scottish River Basin Management Plan (SEPA, 2008a; SG, 2009a).

As previously mentioned, the DP regime in Scotland had been undergoing extensive reforms, the overall aims of which were to create a planning system that was more efficient, more

inclusive, more 'fit for purpose', and more sustainable (SE 2005a). New legislation (entitled *The Planning etc. (Scotland) Act* – referred to as the 'Planning Act') introduced the National Planning Framework (NPF), as well as changes to key planning processes. The NPF became a new national, strategic tier in Scotland's planning hierarchy, which would complement national planning policies and advice notes. This effectively strengthened the Scottish Government's role in shaping the priorities of development planning as a whole. Nonetheless, overall responsibility for the regime remained primarily with local authorities (LAs), who are responsible for the preparation of development plans and for decisions on individual planning applications (referred to as 'development management').

There were no forums or mechanisms that were specifically devoted to tackling integration between the development planning regime and the river basin planning regime. As a result, interaction between the two was dispersed primarily amongst four key 'arenas' – i.e. formal consultation processes in which SEPA and LAs took part, along with other key stakeholders. These arenas include the advisory groups which informed the preparation of the RBMP, the consultations that take place around the preparation of local and regional development plans, and consultations around development management decisions. The interactions that took place within them allowed the actors involved, to some degree, to work out the relationship in practice. The more substantive interactions – i.e. those considered more important and effective by the study's participants – seemed to occur within the regional and local arenas, particularly the preparation of development plans.

4.2. The need to find 'balance'

One common aspect between the two regimes was their mutual focus on the need to find a balance between different interests and objectives. For instance, the draft version of a consolidated national planning policy stated that planning "has a critical balancing

role to play" in the consideration of future development, and that planning issues "bring differing interests into opposition and disagreement", meaning that decisions "will inevitably disappoint some parties" (SG 2008 p. 2).

Such statements explicitly recognise the inherent competition between the different aims that planning decisions must address, and the impossibility of satisfying all aims equally. In terms of who determines this balance, the emphasis seems to fall on local authority planners, and this was reflected in the interviews as well. For instance, local and regional development plans were often characterised as reflecting a balance between interests, and determining that balance seems to rest considerably on the judgement of planners at that level. Similarly, development management decisions were also characterised as 'balancing acts' since planners often have to reconcile potentially contradictory policies that could support and/or reject a given planning application. Such characterisations also made clear that finding a balance between different interests does not mean that all interests are treated equally – inevitably, some issues will be accorded greater weight than others.

There was also evidence in the data to suggest that LA planners may, in many cases, attribute relatively little weight to the RBMP and its objectives. For instance, one development planner remarked that "there may be other issues that we think are more important [than the RBMP] and would require more space and development within the [local] plan…" (Int. 15 & 16). Other interviewees made similar statements, including interviewees from other local authorities, SEPA and other key stakeholders such as Scottish Water. For instance, one interviewee from SEPA noted that development management decisions often had to find a balance between contradictory planning policies – some that may support a given development and others that might oppose it. Furthermore, the

interviewee remarked that the RBMP was generally seen as opposing development, and would therefore "not be ranked very highly in the balancing act" of development decisions (Int. 8).

However, while it may be perceived as having a negative stance towards development, the RBMP itself also claims to reflect a balance of competing environmental and socio-economic interests. For instance, when discussing the process of setting environmental objectives, the river basin management plan for Scotland states "we have sought to strike the right balance between our ambition for the water environment and the benefits we derive from its sustainable use" (SG 2009a ch. 2, p. 6).

This dichotomy between protection and use, in itself, is nothing new – reconciling societies' ambitions for conserving and exploiting the natural environment is effectively the crux of modern environmental management disciplines. The particular significance of the above statements is that the concept of 'sustainability' falls to one side of the balance. The statement illustrates that sustainable development (or the 'sustainable use' of water) is considered an aim in itself that must be *balanced against* environmental protection and improvement. As result, in this context the term 'sustainable' has effectively been divorced from the aims of environmental protection and improvement. In other words, on their own, these latter aims are essentially characterised as *un*sustainable. In other words, there are indications that the characterisation of what is considered to be 'sustainable' may be shifting in this context. This is particularly significant in light of the Scottish Government's overall ambition for 'sustainable economic growth', which (as we argue below) is acting as a frame in shaping this process of integration..

4.3. Overarching influence of 'sustainable economic growth'

In a speech to the newly elected Scottish Parliament in May 2007, John Swinney (Cabinet Secretary for Finance and Sustainable Growth) stated that the new administration's central purpose was 'increasing sustainable economic growth'. The term sustainable economic growth (SEG) is not unique to Scotland, as it has been a long term feature of European policy. For instance, the aim of the Lisbon Strategy (2000 to 2010) was to ensure that the EU economy became 'capable of sustainable economic growth' (Kok 2004 p. 6). However, the Scottish Government's adoption of this central purpose made it a particularly dominant rhetoric in this context, and it was having a significant influence on all the public bodies included in this study, particularly SEPA and local authorities. The concept became a top priority for the DP regime, with national planning policy asserting that the system as a whole should be "directed towards that purpose" (SG 2008 p. 1).

However, the interviews highlighted some uncertainty around SEG as an operational concept within the DP regime. For instance, a strategic development planner noted that development strategies would seek to "support the economic, sustainable economic growth, whatever that means, of this part of the world" (Int. 1). The interviewee's self-correction in adding the word 'sustainable' is potentially telling as well, as it suggests that their first thought was for supporting economic growth. Indeed, the idea that SEG is predominantly about economic growth was suggested elsewhere as well. For instance, another planner interviewee stated (quite matter-of-factly) "I made the mistake there myself of actually saying sustainable economic growth, the concern still is about economic growth and improving… the old GDP measure" (Int. 15 & 16).

Additionally, in their third assessment of the Scottish Government's progress towards sustainable development, the Sustainable Development Commission for Scotland (SDCS) determined that sustainability is in many ways still a "poor second" behind economic growth (SDCS 2009 p. 10). Furthermore, according to the NPF (SG 2009b p. 13), the Scottish Government's main blueprint for achieving SEG is contained in the *Government Economic Strategy* (SG 2007). This in itself is indicative of how sustainability might have been subsumed within an economic agenda.

When the government's consolidated national planning policy was published, it contained a section devoted to SEG. This section attempts to diffuse any potential tension between SEG and sustainable development, stating that the government's "commitment to sustainable development is reflected in its purpose of creating a more successful country… through increasing sustainable economic growth" (SG 2010 p. 7). This statement is careful to acknowledge a distinction between the two concepts (SEG and sustainable development), but still assert that they are wholly compatible with one another, so that the SEG objective is portrayed as being perfectly in keeping with the wider 'commitment' to sustainable development. The policy further elaborates on the role of the planning system, stating that achieving SEG "requires a planning system that enables the development of growth enhancing activities" and characterising the natural environment as "an asset for that growth". The policy goes on to suggest that planning authorities "should take a positive approach to development" (SG 2010 p. 6).

The rhetoric of SEG was also apparent within the RBMP regime. One SEPA interviewee spoke directly about its influence on SEPA's role, as well as the roles of other public bodies, stating that "in the past different public bodies have had their own objectives… whereas now it is

about aligning public bodies, it's all about sustainable economic growth and that is the direction we've been set". The interviewee later reiterated that SEG had set clearer expectations for agencies, so that "rather than having our own outcomes… what we do contributes to the government's outcomes" (Int. 2). Such statements suggest that the Scottish Government is using SEG as a means of aligning the activities of all public bodies, including SEPA and local authorities, to ensure that they are working towards the same outcomes. This overall aim has therefore made its way into SEPA's own strategies – for instance a recent corporate plan stated that SEPA seeks to "create the conditions for sustainable economic growth" by protecting environmental quality (SEPA 2008b p. 9).

To some degree, this aim is also reflected in Scotland's RBMP, which sometimes aligns itself with an 'enabling' approach to development, as in the statement that "[a]better water environment will increase potential for new sustainable water uses and so support our economic growth" (SG 2009a ch. 2, p. 3). In such statements, Scotland's RBMP seems to portray the protection and improvement of the water environment as a means of *increasing* (rather than limiting) the potential for 'sustainable uses', thereby supporting economic growth. This lends further credence to the idea raised in the previous section – that the portrayal of what is 'sustainable' in this context is shifting away form the aims of environmental protection and improvement. Furthermore, it suggests that this shift is being underpinned and entrenched by the Scottish Government's overarching goal of SEG. In this way, SEG appears to be creating a policy frame, both within this integrative relationship and perhaps more broadly, that draws attention towards the fundamental importance of growth and development and downplays environmental aims. This has significant ramifications for how notions of environmental limits to growth are developed and articulated in this context, as discussed below.

4.4. Water as a potential 'constraint' on development

As discussed in the Introduction, debates around the potential existence of environmental limits to growth and development have existed for some time. However, they are particularly significant here because those involved in the emerging relationship between river basin planning and development planning must effectively work out whether the status of the water environment can present a limit to new development and the physical expansion of the built environment. The potential existence of environmental limits, in general terms, is acknowledged within planning policy as well as wider policies on sustainability. For instance, the *UK Shared Framework for Sustainable Development* (DEFRA 2005) sets out five principles of sustainable development, including the importance of 'living within environmental limits'. The Scottish Executive (as it was called at the time) subsequently produced its own sustainability strategy, which highlighted the need to develop "a better understanding of environmental limits, such as robust methods for determining where critical thresholds lie" (SE 2005b p. 48). Additionally, the general notion that environmental limits or thresholds may 'constrain' development is acknowledged within the Scottish Government's planning advice notes, one of which states that "local [development] plan may have to acknowledge that because certain capacity or environmental thresholds have been or are likely to be reached, further development is unlikely to be permitted unless it incorporates measures to address the environmental constraints" (SE 2006a p. 14).

In other words, this statement specifically highlights how local plans might be responsible for recognising and communicating the existence of environmental limits or thresholds. The wording here is noticeably tentative and conditional – i.e. local plans 'may' have to

acknowledge such thresholds, and indicate that development is 'unlikely' to be permitted in certain areas. This tentativeness suggests that local authority planners have considerable discretion in how much attention they devote to these thresholds. However, such discretion assumes that planners can identify those areas where such thresholds 'have been or are likely to be reached'. Given the evident uncertainty around environmental limits, this may present a significant challenge. The statement also assumes that such environmental constraints can be addressed (i.e. removed) through the use of appropriate 'measures'. Similarly, another planning advice note stated that development can "sometimes be constrained by a lack of water and waste water infrastructure or capacity" and that such constraints can include "watercourses at risk of detrimental impact from waste water discharges" (SE 2006b p. 6). Here there is a specific acknowledgement that the water environment can present a 'constraint' to development, but also an apparent assumption that such constraints can and should be overcome so that new development can be accommodated.

The newer consolidated national planning policy also acknowledges the concept of environmental limits, but in a more fleeting manner. It repeats the guiding principles from the *Shared Framework*, and also states that SEG "means building a dynamic and growing economy… while respecting the limits of our environment" (SG 2010 p. 7).This statement seemingly attempts to reconcile the rhetoric of SEG with the concept of environmental limits, by asserting that a 'growing economy' can still 'respect' such limits. The wording is significant however, since 'respecting' environmental limits is not necessarily the same as adhering to them. More importantly, it gives little indication as to how planners, who seem uncertain about operationalizing SEG, might address this tension within development plans and decisions on planning applications.

Within the RBMP regime, the data showed even fewer acknowledgements of the concept of environmental limits. However, the Scottish RBMP does contain several statements suggesting that the status of the water environment could influence where and how new development takes place. For instance, it states that "SEPA, Scottish Water and local authorities will provide advice to developers on where development can be accommodated within the existing capacities of the water purification and distribution network and the water environment" (SG 2009a ch. 3, p. 49). Such statements echo the planning guidance in that they don't appear to question *whether* new development should be accommodated, but focus instead on *where* it can be accommodated. They also appear to treat the 'capacity' of the water environment as an extension of the capacity of water infrastructure, an approach which raises numerous concerns. Indeed, where water infrastructure is concerned, there is an overall presumption that new infrastructure should be provided in order to support planned new development, thus increasing capacity and removing the development constraint. Where the ecological status of the water environment is concerned, the logic of how to increase capacity to accommodate development becomes less clear, but the overall presumption that capacity should be provided appears to remain.

Moreover, there were some indications that this presumption was in keeping with the government's pressure to instil an 'enabling' approach to development. For instance, an interviewee from the Scottish Government stated that RBMPs and the WFD "are not about stopping development, they're about controlling the effects of development. If water issues can be controlled then the water environment is not a reason to stop development" (Int. 18). The significance of this view is that it firmly sidesteps the idea that the protection and improvement of the water environment might require development to be 'stopped' in some

instances. Instead, there is a strong belief that the effects of development on the water environment can be mitigated, which echoes the assumption within planning guidance noted above – i.e. that environmental constraints on new development can be overcome with appropriate 'measures'. Scotland's RBMP also repeatedly highlighted the importance of mitigation measures in new development, particularly the use of sustainable urban drainage systems.

Only one other interviewee (from SEPA) alluded to the potential need to limit new development as a result of impacts on the water environment, stating that future development issues "are going to be about the amount of development that we can allow, all that is going to be possible within a sustainable situation" (Int. 6). This may indicate that some of those involved in this integration process, at least within SEPA, are wrestling with the implication that a 'sustainable situation' for the water environment means that, at some point, development must be curtailed. However, this idea was clearly not top-of-mind for the majority of those involved, given how infrequently it arose in the data. The reason for this absence – whether it was due, for instance, to lack of awareness, or lack of interest, or reluctance to engage with a difficult topic – is not ascertainable. But it is a worrying indication that important strategic questions may be ignored in this context.

5. Discussion & conclusions

The evidence above has illustrated the complex inter-relationships between the hard and soft infrastructure (as defined by Vigar 2009) supporting integration between the RBMP and DP regimes. For instance, because the WFD is a piece of European legislation, the hard infrastructure should theoretically dictate that its objectives (i.e. 'good ecological status') could supersede the objectives of national policy. However, the discussion above shows that

this is not the case. Instead, the aims of protecting and/or improving the water environment become factored into a series of 'balancing acts'. The first is the process of setting environmental objectives within the RBMP regime – these are meant to reflect a balance between protecting the water environment and increasing its sustainable uses. Subsequently, these environmental objectives become part of another 'balancing act' in the context of development plans (where planners must determine how much space is allocated to a range of interests), and then again in the context of development management decisions (where planners must reconcile policies that are for and against a given proposal). This series of balancing acts may serve to continually dilute the emphasis on environmental considerations, and there are clear indications in the data that the objective of protecting and improving the water environment may not be accorded much 'weight' in comparison to economic considerations

Furthermore, while the actual tradeoffs that underpin these balancing acts are not wholly transparent, much of the responsibility for determining the balances seems to rest on the judgements of local authority planners, particularly those involved in preparing development plans. On the surface, this seems to give them greater power in this context, but in reality this does not appear to be the case. These judgements do not occur in a vacuum, but are influenced by a wide range of institutional structures and ordinary politics. Perhaps the most dominant among these is the Scottish Government's overarching aim of instilling an 'enabling' approach to development within the DP regime, in connection with its central purpose of increasing SEG. This overarching agenda appears to be setting new institutional rules (Hodgson 2006) for all of the public bodies involved in this relationship, as it seeks to harmonise their respective aims and activities, and re-package the planning system as a process for 'enabling' development. In other words, while local authority

planners have responsibility for making these 'balancing' decisions, and must therefore deal with the conflicts and consequences associated with those decisions, their accountability to the government's central purpose appears to be emerging as the most influential factor in shaping how that balance is determined, which actually diminishes their power considerably.

The emphasis on SEG also helps to further assess this emerging relationship against the ideas of integration discussed previously. Integration in a policy setting has previously been characterised as a process of negotiation around developing a shared understanding of a problem and its solutions (Brand and Gaffikin 2007; Healey 1999). Our findings suggest that 'increasing SEG' has become the centrally defined problem at the crux of this relationship. However, the adoption of SEG as a 'central purpose' was a government decision (motivated in part by European policy), and the data suggest that it was not the product of much (if any) apparent negotiation in Scotland. For instance, the section on SEG that appears in the final version of the consolidated national planning policy did not appear in its draft (consultation) version. While this study's data was focussed on a particular policy context, the lack of apparent deliberation around SEG within that context is nonetheless troubling, given the apparent magnitude of its influence.

In becoming a centrally defined problem, SEG rhetoric appears to be acting as a policy frame. In this context, the frame is shifting the characterisation of 'sustainability' itself, drawing attention towards the fundamental importance of economic growth (and, by extension, physical growth of the built environment) and downplaying concerns for environmental protection and improvement. This has particular implications for how the concept of environmental limits is treated. Kelly et al. (2004) argued that ideas of

'enoughness' and 'fullupness' might warrant explicit operationalisation in planning decisions. In the context of the water environment, such characterisations of limits to growth cannot rely purely on hydrological research and insight – their articulation must be a socio-political decision. The emerging relationship between the RBMP and DP regimes has the potential to open more discursive space for these ideas, particularly since the 'hard infrastructure' of integration appears highly supportive of discussion-oriented interaction between stakeholders. Such interaction could help develop a greater understanding of how planning decisions can accommodate the goals of protecting and improving the water environment, and help ensure that its ecological limits are not breached.

However, in keeping with the overarching frame of SEG, this potential is not being realised. The prominence of SEG and the related aim of ensuring that planning becomes an 'enabling' activity seems to be prompting the agencies involved (including SEPA and Scottish Water) to actively distance themselves from being characterised as limiting development, thereby encouraging those involved to shy away from discussions of environmental limits. Instead, the focus of this relationship seems to be shifting towards working out how and where new construction and development can be accommodated. This is also reflected in the RBMP's emphasis on helping to 'direct' development to areas with greater environmental 'capacity' and its reliance on localised mitigation measures (e.g. sustainable urban drainage systems or SUDS) for reducing the impact of development. In this way, the ecological status of the water environment becomes falsely characterised as a technical issue that can be solved in order to enable development – an example of this is developed further by Smith et al. (2013).

This analysis is not intended to highlight any failures of the individuals or organisations involved, but more to emphasise a constraint imposed by the institutional structures in place. Both SEPA staff and local authority planners are wrestling with the need to balance development and protecting the environment within the two regimes. However, there is an asymmetry to these concerns, reflecting the overall asymmetrical relationship between RBMP and DP that became entrenched through the Scottish Government's emphasis on SEG. Other studies of WFD implementation have argued that "strong central direction" may be necessary to help improve integration and provide guidance for resolving tradeoffs between interests (Nielsen 2013). In contrast, this study shows how such a 'strong central direction' – the Scottish Government's stance on SEG – can develop into a policy frame that may simply mask how such tradeoffs are made. In this case, the tradeoffs are between the aim of protecting and improving the water environment, and the aim of enabling development. While the processes and decisions that determine those tradeoffs appear to be deliberative, the strength of the frame means they are skewed towards the latter aim.

There have long been calls for greater or improved deliberation within planning processes. These findings lend further credence to those calls – if we are to achieve the objectives of the WFD, or indeed wider ambitions of a more sustainable relationship with the water environment, there is a need for meaningful debate around the real implications of an expanding built environment. In this context, the processes that underpin the preparation of development plans provide a clear focal point for such debate, given their importance as an arena for substantive interaction between the DP and RBMP regimes. However, we also recognise that simply providing opportunities for deliberation is only an initial step, and that the nature of those deliberative interactions are key. In particular, this study highlights the importance of allowing this debate to be 'frame-reflective' (Schön and Rein, 1995; Rein and

Schön, 1996), allowing participants to consider and even challenge the frames shaping their decisions. This perspective can be tied to the more recent work of Owens and Cowell (2011) who highlight how planning processes can create spaces for challenging prevailing political ideologies and reframing debates around sustainability. This study showed that, among those involved in this integrative relationship, there was a degree of scepticism towards the validity of 'increasing SEG' and 'enabling' development as overarching objectives, but also a recognition of ultimate accountability to those objectives. Easing that accountability for all the agencies involved (not just local authority planners) could allow a more frame-reflective process to emerge. Such a debate should extend beyond the continued reliance on environmental mitigation measures such as SUDS, because while such measures are no doubt useful, they cannot wholly eliminate the impacts of human development on the water environment. The implementation of the WFD, and the resulting renewed impetus to integrate river basin planning and development planning, has given those involved in that relationship an important remit to find ways of addressing such impacts in a more robust way. If the deliberative processes at the heart of that relationship were allowed (and even encouraged) to entertain options related to curtailing development and operationalising environmental limits, it could open new avenues towards a more sustainable relationship between the built environment and the water environment.

6. Acknowledgements

The views expressed here are those of the authors and do not necessarily represent the individuals or organisations involved in the research. However, the authors are grateful to all those who gave up their time to participate in this study, and we offer thanks to the organisations they represent: the Scottish Environment Protection Agency, Scottish Natural Heritage, Scottish Water, the Forestry Commission Scotland, the Scottish Government, the

Royal Town Planning Institute, the Convention of Scottish Local Authorities, the Scotland and Northern Ireland Forum for Environmental Research, The Highland Council, Glasgow City Council, Inverclyde Council, the Glasgow & Clyde Valley Strategic Development Planning Authority (SDPA), Aberdeenshire Council, and the Aberdeen City and Shire SDPA. This research project was funded by the Aberdeen Centre for Environmental Sustainability, a joint initiative of the University of Aberdeen and The James Hutton Institute (formerly the Macaulay Land Use Research Institute). Additional funding was provided by the Scottish Government Rural Environment Research and Analysis Directorate (RERAD) Programme 3: Environment – Land Use and Rural Stewardship. The authors also gratefully acknowledge the support of the University of Aberdeen's School of Geosciences and the Macaulay Development Trust in funding this research.

7. References

Albrecht, J., 2013. The Europeanization of water law by the Water Framework Directive: A second chance for water planning in Germany. Land Use Policy, 30, 381-391.

Bardi, U., 2011. The Limits to Growth Revisited. Springer, New York.

Bazeley, P., 2007. Qualitative Data Analysis with NVivo. Sage, London.

Blackstock K., 2009. Between a rock and a hard place: incompatible objectives at the heart of river basin planning? Water Science and Technology, 59, 425-431.

Brand, R. and Gaffikin, F., 2007. Collaborative planning in an uncollaborative world. Planning Theory, 6, 282-313.

Campbell, S., 1996. Green cities, growing cities, just cities? Urban planning and the contradictions of sustainable development. Journal of the American Planning Association, 62, 296-312.

Carter, J.G., 2007. Spatial planning, water and the Water Framework Directive: insights from theory and practice. The Geographical Journal, 173, 330-342.

Carter, N., Kreutzwiser, R.D. and De Loe, R.C., 2005. Closing the circle: linking land use planning and water management at the local level. Land Use Policy, 22, 115-127.

Davies, J.S., 2009. The limits of joined-up government: towards a political analysis. Public Administration, 87, 80-96.

Daviter, F., 2007. Policy Framing in the European Union. Journal of European Public Policy, 14, 654-666.

DEFRA, 2005. One Future - Different Paths: The UK's Shared Framework for Sustainable Development. Department for Environment, Food and Rural Affairs, London.

Derkzen, P., Bock, B. and Wiskerke, J., 2009. Integrated Rural Policy in Context: A Case Study on the Meaning of 'Integration' and the Politics of 'Sectoring'. Journal of Environmental Policy and Planning, 11, 143-163.

EC, 2000. Directive 2000/60/EC of the European Parliament and of the Council of 23rd October 2000 establishing a framework for Community action in the field of water policy. Official Journal of the European Communities, European Commission, Brussels.

Ekins, P. 1993. ‘Limits to growth’ and ‘sustainable development’: grappling with ecological realities. Ecological Economics, 8, 269-288.

Ekins, P., 2000. Economic Growth and Environmental Sustainability: the Prospects for Green Growth. Routledge, London.

Godschalk, D.R., 2004. Land use planning challenges: Coping with conflicts in visions of sustainable development and liveable communities. Journal of the American Planning Association, 70, 5-13.

Goodland, R., 1992. The case that the world has reached limits: more precisely that current throughput growth in the global economy cannot be sustained. Population and Environment, 13, 167-182.

Harris, N. and Hooper, A., 2004. Rediscovering the 'Spatial' in Public Policy and Planning: An Examination of the Spatial Content of Sectoral Policy Documents. Planning Theory and Practice, 5, 147-169.

Healey, P., 1999. Institutionalist Analysis, Communicative Planning, and Shaping Places. Journal of Planning Education and Research, 19, 111-121.

Hering, D. et al., 2010. The European Water Framework Directive at the age of 10: A critical review of the achievements with recommendations for the future. Science of the Total Environment, 408, 4007–4019.

Hodgson, G., 2006. What are institutions? Journal of Economic Issues, 15, 1-25.

Howes, H., 2008. Strategic Planning for Water. Taylor and Francis, London.

Jackson, T., 2011. Prosperity without Growth: Economics for a Finite Planet. Routledge, London.

Jonch-Clausen, T. and Fugl, J., 2001. Firming up the Conceptual Basis of Integrated Water Resources Management. International Journal of Water Resources Development, 17, 501-510.

Kaika, M., 2003. The Water Framework Directive: A New Directive for a Changing Social, Political and Economic European Framework. European Planning Studies, 11, 299-316.

Kallis, G. and Nijkamp, P., 2000. Evolution of EU water policy: a critical assessment and a hopeful perspective. Journal of Environmental Law and Policy, 3, 301-355.

Kallis, G. and Butler, D., 2001. The EU water framework directive: measures and implications. Water Policy, 3, 125-142.

Kelly, M., Selman, P. and Gilg, A., 2004. Taking sustainability forward: relating practice to policy in a changing legislative environment. The Town Planning Review, 75, 309.

Kidd, S. and Shaw, D., 2007. Integrated water resource management and institutional integration: realising the potential of spatial planning in England. Geographical Journal, 173, 312-329.

Kidd, S., 2007. Towards a Framework of Integration in Spatial Planning: An Exploration from a Health Perspective. Planning Theory and Practice, 8, 161-181.

Kok, W., 2004. Facing the Challenge - the Lisbon strategy for growth and employment: Report from the High Level Group chaired by Wim Kok. Office for Official publications of the European Communities, Luxembourg.

Lafferty, W. and Hovden, E., 2003. Environmental Policy Integration: towards an analytical framework. Environmental Politics, 12, 1-22.

Meadows, D.H., Meadows, D.L. and Randers, J., 1972. The Limits to Growth: a Report for the Club of Rome's Project on the Predicament of Mankind. Universa Books, New York.

Meadows, D.H., Randers, J. and Meadows, D.L., 2009. Limits to Growth: Tools for the Transition to Sustainability. Reflections, 9, 34-48.

Mitchell, B., 1990. Integrated Water Management: International Experiences and Perspectives. Belhaven Press, London.

Mitchell, B., 2005. Integrated water resource management, institutional arrangements, and land-use planning. Environment and Planning A, 37, 1335-1352.

Nadin, V., 2007. The emergence of the spatial planning approach in England. Planning Practice and Research, 22, 43-62.

Newman, P., 2008. Strategic Spatial Planning: Collective Action and Moments of Opportunity. European Planning Studies, 16, 1371-1383.

Newson, M.D., 1997. Land, Water and Development: Sustainable Management of River Basin Systems. Routledge, London.

Nielsen, H., Frederiksen, P., Saarikoski, H., Rytkönen, A., Pedersen, A.B., 2013. How different institutional arrangements promote integrated river basin management: Evidence from the Baltic Sea Region. Land Use Policy, 30, 437-445.

Owens, S., 1994. Land, limits and sustainability: a conceptual framework and some dilemmas for the planning system. Transactions of the Institute of British Geographers, 19, 439-456.

Owens, S. and Cowell, R., 2001. Planning for sustainability: new orthodoxy or radical challenge? Town and Country Planning, 70.

Owens, S. and Cowell, R, 2002. Land and Limits: Interpreting Sustainability in the Planning Process, 1st Ed. Routledge, London.

Owens, S. and Cowell, R, 2011. Land and Limits: Interpreting Sustainability in the Planning Process, 2nd Ed. Routledge, London.

Page, G.W. and Susskind, L., 2007. Five Important Themes in this Special Issue on Planning for Water. Journal of the American Planning Association, 73, 141-145.

Pülzl, H. and Treib, O., 2007. Implementing Public Policy, in: F. Fischer, G. Miller & M. Sidney (Eds) Handbook of Public Policy Analysis: Theory, Politics and Methods. CRC Press, Boca Raton, pp. 89-107.

Rein, M. and Schön, D., 1996. Frame-critical policy analysis and frame-reflective policy practice. Knowledge and Policy, 9, 85-104.

Ritchie, J. and Lewis, J. (Eds), 2003. Qualitative Research Practice: A Guide for Social Science Students and Researchers. Sage, London.

Schön, D. and Rein, M., 1995. Frame Reflection: Toward the Resolution of Intractable Policy Controversies. Basic Books, New York.

SDCS, 2009. Sustainable Development: Third Annual Assessment of Progress by the Scottish Government. Sustainable Development Commission Scotland, Edinburgh.

SE, 2005a. Modernising the Planning System. Scottish Executive, Edinburgh.

SE, 2005b. Choosing Our Future: Scotland's Sustainable Development Strategy. Scottish Executive, Edinburgh.

SE, 2006a. Planning Advice Note 51 - Planning Environmental Protection and Regulation (revised). Scottish Executive, Edinburgh.

SE, 2006b. Planning Advice Note 79 - Water and Drainage. Scottish Executive, Edinburgh.

SEPA, 2008a. Draft River Basin Management Plan for the Scotland River Basin District. Scottish Environment Protection Agency, Stirling.

SEPA, 2008b. Corporate Plan 2008-2011. Scottish Environment Protection Agency Stirling.

SG, 2007. The Government Economic Strategy. Scottish Government, Edinburgh.

SG, 2008. Scottish Planning Policy (draft). Scottish Government, Edinburgh.

SG, 2009a. The River Basin Management Plan for the Scotland River Basin District 2009-2015. Scottish Government, Edinburgh.

SG, 2009b. National Planning Framework for Scotland 2. Scottish Government, Edinburgh.

SG, 2010. Scottish Planning Policy. Scottish Government, Edinburgh.

Smith H.M., Wall G. and Blackstock K.L., 2013. The Role of Map-based Environmental Information in Supporting Integration between River Basin Planning and Spatial Planning. Environmental Science and Policy, 30, 81-89.

Stead, D. and Meijers, E., 2009. Spatial planning and policy integration: Concepts, facilitators and inhibitors. Planning Theory and Practice, 10, 317-332.

Thompson, R., 2000. Re-defining planning: the roles of theory and practice. Planning Theory and Practice, 1, 126-134.

Turner, G.M., 2008. A comparison of The Limits to Growth with 30 years of reality. Global Environmental Change, 18, 397-411.

Turnpenny, J. et al., 2008. Why is integrating policy assessment so hard? A comparative analysis. Journal of Environmental Planning and Management, 51, 759-775.

Vigar, G., 2009. Towards an integrated spatial planning? European Planning Studies, 17, 1571-1590.

White, I. and Howe, J., 2003. Policy and Practice: Planning and the European Union Water Framework Directive. Journal of Environmental Planning and Management, 46, 621-631.

Yanow, D., 2000. Conducting interpretive policy analysis. Sage Publications, Thousand Oaks.

Yanow, D, 2007. Qualitative-Interpretive Methods in Policy Research, in: F. Fischer, G. Miller & M. Sidney (Eds) Handbook of Public Policy Analysis: Theory, Politics and Methods. CRC Press, Boca Raton, pp. 405-415.



https://dspace.org/

River basin management, development planning, and opportunities for debate around limits to growth

Smith, Heather M.; Blackstock, Kirsty Louise; Wall, Gill; Jeffrey, Paul

2014-04-18
Elsevier
https://doi.org/10.1016/j.jhydrol.2014.04.022
Smith HM, Blackstock KL, Wall G, Jeffrey P. (2014) River basin management, development planning, and opportunities for debate around limits to growth. Journal of Hydrology, Volume 519, Part C, November 2014, pp. 2624-2631

Downloaded from a DSpace repository. https://dspace.org/