

# Mainstreaming the environment in planning policy and decision making<sup>1</sup>

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## Introduction

This chapter assesses theoretically and practically how we can improve environmental mainstreaming in policy and decision making from its relatively weak position at the present time. Significant research evidence via the Millennium Ecosystem Assessment (MEA) (2003), UKNEA (2011), TEEB (2010), ESPA (2018), WWF (2016) and IPBES (2018) highlights serious and ongoing environmental decline at multiple scales impacting across multiple habitats and species as a direct consequence of human interventions and actions. Despite increased knowledge and awareness of the multiple benefits that the environment provides for society; for example, in the natural capital value of the Great Barrier Reef estimated at £56 billion (Deloitte, 2017, p. 7), there still remains a prevalent narrative that the environment is an impediment to economic growth. This highlights the tension and potential incompatibility between short-term political and economic priorities versus longer-term environmental goals.

Mainstreaming is about reconciling these tensions and ‘moving environmental issues from the periphery to the centre of decision-making, whereby environmental issues are reflected in the very design and substance of sectoral policies’ (EEA, 2005, p. 12). Thus, mainstreaming processes necessarily involve a change in culture and behaviours across multiple audiences if they are to be successful. This requires attention to both the process and outcomes from mainstreaming activities recognising that the term suffers from uncritical and excessive usage in research and practice initiatives which obfuscates its complexity and importance (Scott et al., 2018). Indeed, too many environmental challenges are identified, assessed, diagnosed and treated within environmental silos without the involvement of other stakeholders, often leading to conflict, rejection or alienation within economic, political and social arenas (Scott et al., 2013).

Furthermore, decision makers rarely understand or have access to sufficient scientific data to guide them or access to tools that take full account of the value(s) of the environment. Indeed, in reviewing 17 ecosystem service decision-support tools, Bagstad et al. (2013) found that most were too resource intense for routine use in public and private sector decision making.

This chapter draws on emerging ideas from environmental and spatial planning theory and practice to offer an improved conceptualisation and operationalisation of mainstreaming

concomitant with the development and enhancement of mechanisms and tools to facilitate this. However, first we need to identify and understand the barriers that hinder current mainstreaming efforts.

## **Exposing disintegrated development in environmental planning theory and practice**

Disintegrated development arguably represents the key cultural barrier to overcome (Scott et al., 2013). It captures the way much research, policy and decision making occurs within separate silos, each with their favoured paradigms, agency champions, preferred tools, approaches and stakeholders. This creates separate sectoral pathways with associated processes and outcomes that rarely intersect. Furthermore, the shift from government to governance has dramatically increased the number and complexity of actors, agencies and partnerships operating within the same contested spaces, resulting in increased participatory conflict with attendant problems of accountability and transparency to overcome (Lockwood, 2010).

Within the built and natural environment arena there are two ‘competing’ paradigms of spatial planning as defined by Allmendinger and Haughton (2010, p. 83) as ‘shaping economic, social, cultural, and ecological dimensions of society through “place making” with a shift towards more positive, integrated and resource-based contexts’ and the ecosystem approach (EcA) defined in the UN Convention on Biological Diversity (CBD, 2010, p. 12) as ‘a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way’. Despite their similarities, few researchers have assessed their intersection or interdependencies (Scott et al., 2013) which has led to significant problems in built environment practice as illuminated within the three following case studies.

### ***The fallacy of ecosystem services (ES) mainstreaming***

Today the ES concept is believed to be the dominant policy-making framework for the natural environment sector (Reed et al., 2017). However, it has yet to be mainstreamed successfully across economic development and planning sectors, despite spurious claims to have done so (UKNEAFO, 2014). So whilst there have been dedicated national ecosystem assessments (for example, Schröter et al., 2016), new voluntary environmental markets from payments for ecosystem services programmes (for example, Reed et al., 2017), green accounting methods (for example, World Bank, 2010), habitat banking and trading development rights schemes (Santos et al., 2015) and improved communication on the importance of ecosystems and biodiversity to human wellbeing (Luck et al., 2012), the ES concept struggles to gain traction outside the natural environment arena (Posner et al., 2016).

The reasons for this failure are based on a number of co-related factors. First, the rapid pace of advancement of ecosystem science itself within the environmental sector, complete with its own separate sub-discourses and environmental critiques. Second, the limited attempts to engage with other sectors within research with a predilection for working with the usual environmental suspects as partners. For example, the planning profession consistently has been absent in ecosystem services research; yet the majority of policy and decision making is made using statutory land use planning documents and processes. Third, the economic and planning arenas have developed and championed their own guiding paradigms, narratives and tools (for example, Spatial Planning; Building Information Modelling; and SMART cities) reinforcing disciplinary and professional divides with the environment. Finally, the technocentric vocabulary of ES and natural capital requires significant investment in time to understand and apply

to non-environmental work practices with few attempts in evidence to translate these ideas for other audiences (see TEEB, 2010 for a notable exception).

### ***The value(s) and cost(s) of parks***

There has been significant research valuing public parks and green infrastructure with evidence of multiple environmental benefits flowing from effective management regimes; for example, water regulation, climate change regulation, pollination, biodiversity, recreation, mental and physical health and wellbeing and food growing, albeit with differential spatial and socio-economic impacts (Wolch et al., 2014). Vivid Economics (2017) have recently calculated the value of London's parks as £91 billion using natural capital accounting methods.

However, decision makers primarily view parks in neoclassical economic cost and profit terms which currently does not generate sufficient tangible financial revenue via taxes and charges to offset long-term management liabilities in increasing maintenance budgets (Mackrodt and Helbrecht, 2013). Thus, cutting resources for parks is common, as the benefits of such investments are not easy to capture or to transfer into existing financing models or market-based instruments (Hanley and Barbier, 2013). Furthermore, through the lens of traditional economic cost benefit analysis, concepts such as increased Gross Value Added (GVA) and Gross Domestic Product (GDP) provide tangible and powerful political indicators that may lead to further erosion of parks and green spaces under the guise of economic development.

### ***Low-impact development and scalar disintegration***

The scalar dimension of policy disintegration is evidenced within development at Brithdir Mawr in Pembrokeshire national park (Adams et al., 2013). Here, conflict with a permaculture development in a farm setting in open countryside resulted in a complex planning case lasting over 10 years. Buildings were constructed in open countryside without planning permission and when spotted led to enforcement action being taken by Pembrokeshire Coast National Park Authority. The subsequent planning decision required several low-impact buildings to be demolished, including a roundhouse, as they contravened approved housing policy relating to development refusals in open countryside. A subsequent public inquiry further confirmed the buildings be demolished resulting in a global and national campaign to save the roundhouse. According to the planning inspector, the development could not be sustainable as it contravened development plan policies which, under plan-led legislation, provided the legal definition of sustainability (Scott, 2001). Simultaneously, the Welsh Assembly Government launched their new policy on low impact development where they included the condemned Brithdir Mawr roundhouse as an exemplar of sustainable development.

Here, the relative flexibility of national planning guidance collided with the more bureaucratic statutory and dated local plan processes that dealt with housing in isolation from the wider environmental and societal benefits that low impact developments might offer. The issue also exposed the problem of a risk averse planning system dealing with something new and innovative where, at that time, there was limited policy responses or case law to draw upon in relation to determining low impact developments, although planning agreements with temporary planning permission had been used previously as part of an adaptive management process; for example, Tinkers Bubble Somerset (Scott, 2001). However, the planning system did make provision for houses in open countryside for agricultural workers based on functionality and viability assessments, where workers were required to live onsite. Yet this was rooted in the provisions of the 1947 Agriculture Act where profitability was a key consideration. This in no way captures

the diverse nature of contemporary farming/permaculture activities and the production of multiple environmental benefits that could have helped prove a case for such a development.

### Environmental mainstreaming towards a mainstreaming typology

The previous case studies highlight the need for improved theoretical and practice pathways to make the transition from policy conflict and ‘disintegration’ towards more effective environmental mainstreaming.

Drawing from examples in practice undertaken by the author in developmental mainstreaming projects, the UKNEAFO (2014) and Scott et al. (2018), a mainstreaming continuum has been developed for this chapter to capture and characterise different modes of environmental mainstreaming activity that were observed (Figure 36.1). The different stages reflect increasing capacity, capability and culture/behaviour change within a given case study setting but crucially should not be seen as a normative framework. Rather, they reflect the art and science of what is possible and pragmatic at that time.

Thus, some initiatives will start mainstreaming activity through simply retrofitting environmental benefits/services into to a plan, policy, project or programme (PPPP) retrospectively without influencing the rest of the plan process or document (Retrofit). Usually this takes the form of an action plan which can act as an evaluation tool for future progress. A more common approach is to create a dedicated environmental chapter/section/project as part of a PPPP but with limited integration or cross referencing across the other chapters/sections/areas, reflecting the different individuals who developed them in isolation (Incremental). Arguably this is the most common stage of environmental mainstreaming that was observed, but it is vulnerable without integration. This mode occurs when a PPPP identifies specific multidisciplinary challenges that require the integration of multiple policy areas and staff working together within planned assessments and interventions. Often this involves task and finish groups which are assembled for such activities (Challenge-led). Finally, there is a mode that champions a systems perspective. Here the PPPP challenges are identified collectively through an understanding of the drivers, interactions and interdependencies affecting the PPPP leading to co-developed interventions across different interdisciplinary teams with shared values and goals identified from the outset (Systemic).

The continuum is dynamic with movement either way possible due to improved knowledge exchange/transfer (for example, successful case studies) and/or particular planning decisions and case law. Movement can also be dramatic when a tipping point or crisis emerges which transforms actions. A good example of this is the recent issue of plastics in the oceans where one trigger was the Blue Planet 2 TV series which has mobilised both national and international actions and legislation.

Rogers (2003) classic diffusion model provides a useful way of conceptualising this and mainstreaming processes more generally as different environmental innovations move through stages of knowledge generation, persuasion, decision (adoption/rejection), implementation and



Figure 36.1 A mainstreaming continuum

Source: Author's own

confirmation (Figure 36.2). Here the efficacy of the communication channels, the nature and power of those stakeholders and gatekeepers involved, and the nature of the idea or innovation itself, become key features in determining progression. Overcoming the persuasion stage is perhaps the key gateway to reaching the challenge and systemic stages.

The current barriers that prevent the persuasion stage being breached are summarised below:

- The environmental narrative has been traditionally constructed and viewed in policy and decision making as a constraint to overcome;
- The complex and widespread use/misuse of ES, natural capital and biodiversity language has alienated other interests who struggle to keep up with the evolution of ecosystem science;
- The lack of exemplars and social learning platforms that can demonstrate environmental mainstreaming inhibits further uptake;
- The widespread use of policy-based evidence approaches by key gatekeepers hinders acceptance of different ideas to the accepted policy narrative. Thus, evidence-based policy is often rejected;
- The micropolitics within agencies and partnerships can block meaningful progress and change, with the status quo preferred.

We can flip these barriers into opportunities within a stepped process:

- Reconnecting disparate paradigms (for example, the ecosystem approach and spatial planning) to help integrate different theoretical viewpoints within shared values and vocabularies;
- Reframing and translating core environment concepts within the vocabulary and everyday terms and concepts that are used and prioritised by economic and social interests and audiences:
  - identifying ‘hooks’ reflecting key policy or legislation, duties or priorities that relate to a particular user group to build initial traction;
  - identifying ‘bridges’ reflecting a term, concept or policy priority that is used and readily understood across multiple groups and publics to build traction;
- Translating the environmental concepts within these hooks and bridges amongst policy and decision makers to start inclusive and safe discussion spaces generating new pathways.

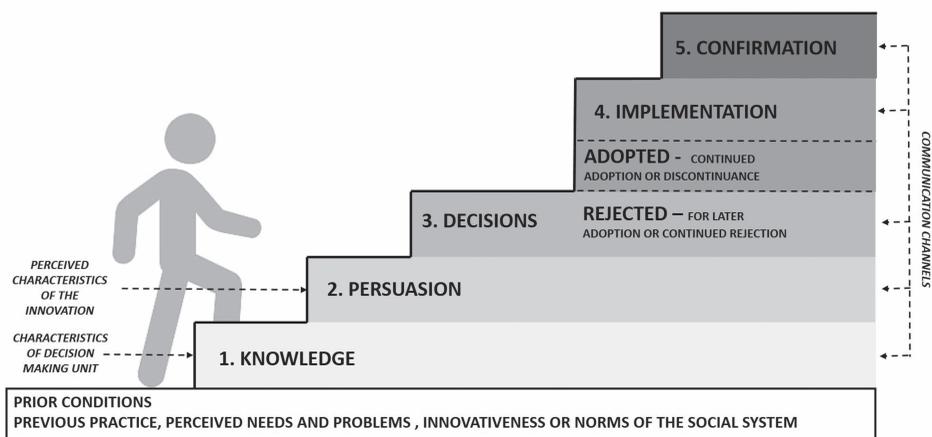


Figure 36.2 A model of five stages in the innovation decision process

Source: adapted from Rogers (2003, p. 170)

All the above points highlight the need for developing more inclusive processes and improved dialogues based on mutual respect and understandings of different groups' world views within safe social learning and knowledge exchange spaces which can readily incorporate and integrate competing theories, ideas and cultures and thus break down silos (Cowell and Lennon, 2014). The connecting of paradigms from their hitherto separate pathways provides the conceptual glue to join up the disparate and disintegrated natural and built environments between the ecosystem approach and spatial planning.

Table 36.1 captures these synergies within a mapping exercise of the 12 Malawi principles (Ecosystem Approach (EcA)) against six spatial planning principles advanced by the UNECE (2008). Both EcA and Spatial Planning are rooted in social-ecological systems thinking (Bruckmeier, 2016) within an interdisciplinary human-centred perspective crossing environmental, social, economic, political and cultural contexts and sectors (Gómez-Baggethum and Barton, 2013). Both require the adoption of participatory approaches incorporating equity and shared values (Reed et al., 2013); both involve a change in values and thinking from negative associations of policies associated with protection, control and restraint towards more holistic, proactive and development-led visions and interventions (Scott et al., 2013).

The journeys and experiences of two environmental mainstreaming case studies are now used to help illuminate the mainstreaming continuum revealing its wider applicability and transferability. Table 36.2 summarises these two case studies.

### ***Birmingham Green Living Spaces Plan (GLSP)***

Birmingham has an ambition to become a leading global green city. Against this backdrop, it established a Green Commission, a cross cabinet-level body, who collectively agreed a new green vision. As part of the development of the City's Local Plan the need for a Green Infrastructure Strategy was identified and approved. This opportunity was exploited to take advantage of the latest science emerging from the UK National Ecosystem Assessment (UKNEA, 2011) and provisions within the Natural Environment White Paper and the emerging National Planning Policy Framework (NPPF) (DCLG, 2012) (paragraph 109 recognising the value of ecosystem services).

One of the barriers to adopting an ecosystem approach at a city scale had been the level of understanding required. Therefore, a series of studies were undertaken, applying the ecosystem services methodology to six dominant urban issues and displaying these as GIS maps of the city. These six chosen topics were aesthetics and mobility, flood risk, local climate, education, recreation and biodiversity. These were depicted in both supply and demand maps showing areas of need and overprovision. These six maps were then super-imposed into a single multi-layered challenge map for Birmingham (Figure 36.3).

These maps can then be overlaid onto the street plan and reduced to district or neighbourhood scale for more detailed interpretation and used as evidence maps by non-specialists including community groups and elected members.

As part of the mainstreaming process in the GLSP, Birmingham established a cross disciplinary working group, who brought together their evidences, policies and delivery plans. This dialogue generated seven cross cutting principles that could form the backbone of the green infrastructure policy. These seven principles have then been locked into the statutory Birmingham Local Plan (now approved). The seven chosen principles are: (1) An Adapted City; (2) The City's Blue Network; (3) A Healthy City; (4) The City's Productive Landscapes; (5) The City's Greenways; (6) The City's Ecosystem; and (7) The City's Green Living Spaces.

Table 36.1 Mapping spatial planning and ecosystem approach paradigms

<i>Spatial planning principles</i>	<i>Ecosystem approach principles</i>
<p>'shaping economic, social, cultural, and ecological dimensions of society through "place making" . . . positive, integrated and resource-based contexts' Allmendinger and Haughton (2010, p. 83).</p> <p>The Governance Principle (e.g. authority, legitimacy, institutions, power, decision making)</p> <p>The Subsidiarity Principle (e.g. delegation to lowest level, shared responsibility, devolution)</p> <p>The Participation Principle (e.g. consultation, inclusion, equity, deliberation)</p> <p>The Integration Principle (e.g. holistic, multiple scales and sectors, joined up)</p> <p>The Proportionality Principle (e.g. deliverable viability, pragmatism, best available information)</p> <p>The Precautionary Principle (e.g. adaptive management, limits, uncertainty, risk)</p>	<p>'strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way' (CBD, 2010, p. 12).</p> <ol style="list-style-type: none"> <li>1 The objectives of management of land, water and living resources are a matter of societal choice.</li> <li>3 Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.</li> <li>9 Management must recognise the change is inevitable.</li> <li>2 Management should be decentralised to the lowest appropriate level.</li> <li>11 The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.</li> <li>12 The ecosystem approach should involve all relevant sectors of society and scientific disciplines.</li> <li>3 Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.</li> <li>5 Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.</li> <li>7 The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.</li> <li>8 Recognising the varying temporal scales and lag effects that characterise ecosystem processes, objectives for ecosystem management should be set for the long-term.</li> <li>10 The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.</li> <li>4 Recognising potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context.</li> <li>9 Management must recognise the change is inevitable.</li> <li>6 Ecosystem must be managed within the limits of their functioning.</li> <li>8 Recognising the varying temporal scales and lag effects that characterise ecosystem processes, objectives for ecosystem management should be set for the long-term.</li> <li>10 The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.</li> </ol>

Source: Scott et al. (2018, p. 233)

Table 36.2 Case studies of environmental mainstreaming

Case study	Environmental planning challenge	Key ESP principles	Approach to mainstreaming	Hooks /bridges	Key tools used to help mainstreaming
Birmingham City Council non statutory Green Living Spaces Plan 2014	What is the value of green infrastructure (GI) to the residents and businesses of the city? How can the council embed this information to improve its policies, plans and investment opportunities?	Governance Integration Proportionality Precautionary	ES assessment of GI. Created green commission at Cabinet level. Used ES data sets to create demand and supply maps showing areas requiring ES investment.	H Climate change national performance indicators H NPPF paragraph 109 <sup>2</sup> B Green Infrastructure B Multiple Benefits B Risk	Green Commission Ecosystem Services Mapping (Demand and Supply) Public engagement workshops
South Downs National park	How can the ECA be used within the park authority in general and a park local plan in particular to improve policy and decision making?	Governance Integration Proportionality Precautionary	Developing an ES policy as one of 4 core policies pervading across all local plan policies	H UKNEA H NEWP H NPPF paragraph 109 B Park Management Plan Infrastructure B Multiple Benefits	Strong and effective leadership at officer and board level Mapping Ecosystem Services Statutory planning process. Board, staff and public engagement workshops Technical advice for householders/ developers to optimise policy outcomes.



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*Figure 36.3* Multi-layered challenge map for Birmingham, UK

Source: Birmingham City Council (2013, p. 26)

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### What is the added value of this process to environmental planning?

- Green Commission endorsement of the Ecosystem Services Framework has brought added value to driving forward the city's green vision and appetite for change;
- Supply and demand maps offer a tangible and understandable output for action in particular areas based on evidence which can help secure investment;
- Applying the Ecosystem Approach brings together a wider range of stakeholders and potential budget-holders/investors into a shared dialogue that would not normally happen.

### What are the lessons learnt?

- Strong and effective leadership to drive the change agenda through despite obstacles;
- Linking the work to national government policy (hooks) and other departmental interests and concerns (for example, risk and health) is key to making progress;
- Demonstrate who benefits and who loses in easy visualisations;
- Lock-in the proposed changes to existing and future city policy and spatial planning policy;
- Recruit local and political champions across different communities of interest to maximise legacy;
- Updating the data and ongoing communication to members to also inform any new layers of governance that may emerge.

### *South Downs National Park Local Plan*

South Downs National Park Authority (SDNPA) was created in 2011 with statutory responsibilities for the protection of the natural beauty and the promotion of informal recreation. As a new national park, it positioned itself as an innovator in environmental planning and delivery seeking to mainstream the EcA into its plans and policy processes. The UKNEA (2011); NEWP (HM Government, 2011b) and NPPF (DCLG, 2012) were seen as key hooks to facilitate this.

Its first statutory park management plan (SDNPA, 2013) set out the framework for the protection of the park and its special qualities using the Ecosystems Services Framework (ESF). The draft local plan built on this plan providing the statutory planning policy framework and area plans for deciding planning applications within the park boundary.

Initially there was a targeted strategy of consultation and awareness-raising amongst its members, partnership board and 15 planning districts through a number of meetings and workshop events. Here the NPPF paragraph 109 hook on 'recognising the value of ecosystem services' (DCLG, 2012) helped secure the involvement of the entire planning team (strategic and development management) with strong leadership and enthusiasm from the director of planning. This created a bridge to communicate and work jointly with other section leads across the SDNPA enabling the park to secure resources for mapping key ecosystem services (ECOSERV) as an evidence base to feed subsequent policy development. Crucially at that time, they also engaged with several academics and researchers to maximise knowledge exchange within their method. The cumulative social learning resulted in draft policy (SD2, Ecosystem Services (SDNPA, 2015)) which sits as one of only four higher-level policies that all other policies in the plan are subservient to.

### **Draft Core Policy SD2 Ecosystem Services (submission to Local Plan inquiry)**

Proposals that deliver sustainable development and comply with other relevant policies will be permitted provided that they do not have an unacceptable adverse impact on the

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natural environment and its ability to contribute goods and services. Proposals will be expected to:

- a Provide more and better joined up natural habitats;
- b Conserve water resources;
- c Sustainably manage land and water environments;
- d Improve the National Park's resilience to, and mitigation of, climate change;
- e Increase the ability to store carbon through new planting or other means;
- f Conserve and improve soils;
- g Reduce pollution;
- h Mitigate the risk of flooding;
- i Improve opportunities for peoples' health and wellbeing;
- j Stimulate sustainable economic activity;
- k Deliver high-quality sustainable design.

Development proposals must be supported by a statement that sets out how the development proposal impacts, both negatively and positively on ecosystem services (SDNPA, 2015).

The policy provides a negotiating tool for planners to have a dialogue about ES outcomes. Note how the ES language is 'translated' into plain English concepts in categories a–k which are accessible to planning applicants and wider publics. This has been supplemented with bespoke technical advice to developers and householders showing how positive environmental outcomes can be secured. This helps deliver the innovative requirement for all developments to produce an assessment of the impact on the ecosystem services, a key prerequisite for changing behaviours.

Under the NPPF (DCLG, 2012) and Localism Act 2011 (HM Government, 2011a), the park is required to undertake a Duty to Cooperate (DTC) across cross boundary strategic issues to ensure that ES are protected and enhanced. Their interim statement on these issues (SDNPA, 2015, p. 4.2) is below:

- Conserving and enhancing the natural beauty of the area;
- Conserving and enhancing the region's biodiversity;
- The delivery of new homes, including affordable homes and pitches for Travellers;
- The promotion of sustainable tourism;
- Development of the rural economy;
- Improving the efficiency of transport networks by enhancing the proportion of travel by sustainable modes and promoting policies which reduce the need to travel.

This statutory obligation to cooperate with the SDNPA also helps them engage with other planners across 15 neighbouring authorities on environmental topics providing the initial traction to what are likely to be challenging discussions.

### **What is the added value of this process to environmental planning?**

- Securing the involvement of all planning staff and board members helps mainstreaming processes develop from the outset. There is a new paradigm which all staff buy into;
- The positive framing of Policy SD2 with bespoke guidance for households and developers enables beneficial ES outcomes to be discussed and negotiated from all planning applications across multiple scales and stakeholders;

- Building a pyramid of plans (park management plan – local plan – neighbourhood plans and green infrastructure plan) based on the same paradigm overcomes silos within the SDNPA and its residents.

### Lessons learnt

- Importance of securing political and officer leadership from the start;
- Value of working with outside academics brings credibility and rigour to processes;
- Need both regulatory and incentive approaches to maximise mainstreaming potential; regulation helps establish initial traction but nudging and negotiation processes are critical;
- Up-front investment in participation with residents, landowners and neighbouring local planning authorities is key to successful mainstreaming efforts.

### Conclusion

This chapter has exposed the mainstreaming challenge within environmental planning signposting various ways of addressing it effectively. At present, we are experiencing significant policy disintegration which inhibits and obfuscates mainstreaming processes leaving them trapped largely within environmental sectors and stakeholders. Mainstreaming is a dynamic and evolutionary diffusion process constrained by capacities, capabilities and micro-politics within a given setting. We have identified key drivers that influence success: the need for political support; the interplay between statutory and informal procedures; effective leadership; safe social learning spaces; and a willingness to experiment by stepping outside usual comfort zones and developing new funding and investment tools. Crucially, the language and process of environmental mainstreaming needs to be collectively owned and positively shaped by those engaged with it rather than relying on one department or staff member for its success. This requires a significant culture and behaviour change.

By working across different paradigms, synergies can be identified within which to position mainstreaming efforts. Here the concepts of hooks and bridges provide the key translation devices to help the transition from environmental silos to more effective mainstreaming, enabling key actors and gatekeepers to accept, use and ultimately legitimise environmental concepts within their own policy and practice vocabularies and priorities, thereby creating the traction for further exploration and development of the idea within an adoption process as exemplified by the Birmingham and South Downs examples. In such pioneering endeavours this chapter has hopefully given a stronger theoretical and practical basis for mainstreaming together with a call for more collective social learning from both successes and failures to provide improved opportunity spaces for policy and decision making in the future.

### Notes

- 1 This chapter is based on work carried out as part of the following grant: Mainstreaming Green Infrastructure in Planning Policy and Decision Making NE/R00398X/1.
- 2 NPPF (DCLG, 2012) paragraph 109 'The planning system should contribute to and enhance the natural and local environment by: . . . recognising the wider benefits of ecosystem services'.

### References

- Adams, D., Scott, A. J. and Hardman, M. (2013). 'Guerrilla warfare in the planning system: revolutionary progress towards sustainability?' *Geografiska Annaler, Series B: Human Geography*, 95(4): 375–87.

- Allmendinger, P. and Haughton, G. (2010). 'Spatial planning, devolution, and new planning spaces'. *Environmental Planning C: Politics and Space*, 28(5): 803–18.
- Bagstad, K. J., Semmens, D. J., Waage, S. and Winthrop, R. (2013). 'A comparative assessment of decision-support tools for ecosystem services quantification and valuation'. *Ecosystem Services*, 5: 27–39.
- Birmingham City Council (2013). *Green living spaces plan*. Birmingham: Birmingham City Council.
- Bruckmeier, K. (2016). *Social-ecological transformation: reconnecting society and nature*. London: Palgrave Macmillan.
- Convention on Biological Diversity (CBD) (2010). *Ecosystem Approach*. Available at: [www.cbd.int/ecosystem/](http://www.cbd.int/ecosystem/)
- Cowell, R. and Lennon, M. (2014). 'The utilisation of environmental knowledge in land-use planning: drawing lessons for an ecosystem services'. *Environment and Planning C: Government and Policy*, 32(2): 263–82.
- Department for Communities and Local Government (DCLG) (2012). *The national planning policy framework*. London: DCLG.
- Deloitte (2017). *At what price? The economic, social and icon value of the Great Barrier Reef*. Brisbane: Deloitte Access Economics. Available at: <https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economics-great-barrier-reef-230617.pdf>
- EEA (2005). *Environmental policy integration in Europe: state of play and an evaluation framework*. Technical Report No. 2/2005. Copenhagen: European Environment Agency.
- ESPA (Ecosystem Services Poverty Alleviation) (2018). *ESPA research programme*. Available at: [www.espa.ac.uk](http://www.espa.ac.uk)
- Gómez-Baggethun, E. and Barton, D. N. (2013). 'Classifying and valuing ecosystem services for urban planning'. *Ecological Economics*, 86: 235–45.
- Hanley, N. and Barbier, E. B. (2013). *Pricing nature. Cost-benefit analysis environmental policy*. Cheltenham: Edward Elgar.
- HM Government (2011a). *The Localism Act*. Available at: [www.legislation.gov.uk/ukpga/2011/20/contents/enacted](http://www.legislation.gov.uk/ukpga/2011/20/contents/enacted)
- HM Government (2011b). *The natural choice: securing the value of nature*. CM 8082. London: HM Government. Available at: [www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/228842/8082.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228842/8082.pdf)
- IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services) (2018). *Work programme*. Available at: [www.ipbes.net](http://www.ipbes.net)
- Lockwood, M. (2010). 'Good governance for terrestrial protected areas: a framework, principles and performance outcomes'. *Journal of Environmental Management*, 91(3): 745–66.
- Luck, G. W., Lavorel, S., McIntyre, S. and Lumb, K. (2012). 'Improving the application of vertebrate trait-based frameworks to the study of ecosystem services'. *Journal of Animal Ecology*, 81(5): 1065–76.
- Mackrodt, U. and Helbrecht, I. (2013). 'Performative Bürgerbeteiligung als neue Form kooperativer Freiraumplanung' [Performative participation – a new cooperative planning instrument for urban public spaces]. *disP – The Planning Review*, 49(4): 14–24.
- Millennium Ecosystem Assessment (MEA) (2003). *Ecosystems and human well-being. A framework for assessment*. Washington, DC: Island Press.
- Posner, S., Getz, C. and Ricketts, T. (2016). 'Evaluating the impact of ecosystem service assessments on decision-makers'. *Environmental Science & Policy*, 64: 30–7.
- Reed, M. S., Hubacek, K., Bonn, A., Burt, T. P., Holden, J., Stringer, L. C., Beharry-Borg, N., Buckmaster, S., Chapman, D., Chapman, P., Clay, G. D., Cornell, S., Dougill, A. J., Evelyn, A., Fraser, E. D. G., Jin, N., Irvine, B., Kirkby, M., Kunin, W., Prell, C., Quinn, C. H., Slee, W., Stagl, S., Termansen, M., Thorp, S. and Worrall, F. (2013). 'Anticipating and managing future trade-offs and complementarities between ecosystem services'. *Ecology and Society*, 18(1): 5. <http://dx.doi.org/10.5751/ES-04924-180105>
- Reed, M. S., Allen, K., Atlee, A., Dougill, A. J., Evans, K., Kenter, J., McNab, D., Stead, S. M., Twyman, C., Scott, A. J., Smyth, M. A., Stringer, L. C. and Whittingham, M. J. (2017). 'A place-based approach to payments for ecosystem services'. *Global Environmental Change*, 43: 92–106.
- Rogers, E. M. (2003). *Diffusion of innovations* (5th edn). London: Simon and Schuster.
- Santos, R., Schroter-Schlaack, C., Antunes, P., Ring, I. and Clemente, P. (2015). 'Reviewing the role of habitat banking and tradable development rights in the conservation policy mix'. *Environmental Conservation*, 42(4): 294–305.
- Schröter, M., Albert, C., Marques, A., Tobon, W., Lavorel, S., Maes, J., Brown, C., Klotz, S. and Bonn, A. (2016). 'National ecosystem assessments in Europe: a review'. *Bioscience*, 66(10): 813–28.
- Scott, A. J. (2001). 'Contesting sustainable development: a case study of Brithdir Mawr'. *Environment Policy and Planning*, 3: 273–87.

- Scott, A. J., Carter, C. E., Larkham, P., Reed, M., Morton, N., Waters, R., Adams, D., Collier, D., Crean, C., Curzon, R., Forster, R., Gibbs, P., Grayson, N., Hardman, M., Hearle, A., Jarvis, D., Kennet, M., Leach, K., Middleton, M., Schiessel, N., Stonyer, B. and Coles, R. (2013). 'Disintegrated development at the rural urban fringe: re-connecting spatial planning theory and practice'. *Progress in Planning*, 83: 1–52.
- Scott, A. J., Carter, C., Hardman, M., Grayson, N. and Slaney, T. (2018). 'Mainstreaming ecosystem science in spatial planning practice: exploiting a hybrid opportunity space'. *Land Use Policy*, 70: 232–46.
- South Downs National Park Authority (SDNPA) (2013). *Partnership management plan*. Available at: [www.southdowns.gov.uk/national-park-authority/our-work/key-documents/partnership-management-plan/](http://www.southdowns.gov.uk/national-park-authority/our-work/key-documents/partnership-management-plan/)
- South Downs National Park Authority (SDNPA) (2015). *Local plan*. Available at: [www.southdowns.gov.uk/planning/planning-policy/national-park-local-plan/](http://www.southdowns.gov.uk/planning/planning-policy/national-park-local-plan/)
- TEEB (2010). *The economics of ecosystems and biodiversity: mainstreaming the economics of nature: a synthesis of the approach, conclusions and recommendations of TEEB*. Geneva: UNEP TEEB.
- UK National Ecosystem Assessment (UKNEA) (2011). *Synthesis of the key findings*. Cambridge: UNEP-WCMC.
- UK National Ecosystem Assessment Follow-On (UKNEAFO) (2014). *Synthesis of the key findings*. Cambridge: UNEP-WCMC.
- United Nations Economic Commission for Europe (UNECE) (2008). *Spatial planning: key instrument for development and effective governance with special reference to countries in transition*. Geneva: UN.
- Vivid Economics (2017). *Natural capital accounts for public green space in London*. London: Vivid Economics. Available at: [www.vivideconomics.com/publications/natural-capital-accounts-for-public-green-space-in-london](http://www.vivideconomics.com/publications/natural-capital-accounts-for-public-green-space-in-london)
- Wolch, J. R., Byrne, J. and Newell, J. P. (2014). 'Urban green space, public health, and environmental justice: the challenge of making cities "just green enough"'. *Landscape and Urban Planning*, 125: 234–44.
- World Bank (2010). *Environmental valuation and greening the national accounts: challenges and initial practical steps*. Washington, DC: World Bank. Available at: <http://siteresources.worldbank.org/EXT/EEI/Resources/GreeningNationalAccountsDec19.pdf>
- WWF (2016). *Living planet report 2016. Risk and resilience in a new era*. Gland, Switzerland: WWF International.

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