

# environmental SCIENTIST



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## QUADROPHILIA

How decentralisation  
has helped the  
environment

# Devolution and multi-scalar environmental management



The process of devolution of power in the UK has allowed for a diversity of approaches to the management of our natural environment, set within a common framework of European environmental legislation and international agreements. It has enabled all the devolved administrations to develop their own distinct approach and the evidence suggests that it has resulted in greater value being placed on the management of the natural environment not only as a key asset for economic and social development, but as a representation of national identity.

The UK Government will have to both respect the devolved administrations and enable environmental management powers in new devolved city region structures, but also invest in UK wide priorities and structures that can connect the parts of our 'sovereign state' with each other and with the rest of the world.

For example, in Wales, the principle of sustainable development was set at the heart of the first Government of Wales Act, making it one of the few administrations in the world with such a legal duty. The recent introduction of the Wellbeing of Future Generations (WFGA) and the Environment (Wales) Acts has built on this platform to provide a distinctive legislative framework for enabling sustainable development which has also included the establishment of new institutions such as the Commissioner for Future Generations and Natural Resources Wales. However the effective management of our natural environment must be part of a global approach. The UN Sustainable Development Goals (which have been incorporated in the WFGA), provide an important opportunity to create the appropriate infrastructure to realise this aim, but the level of the current UK Government response is not encouraging.

The management of our natural environment requires structures that go beyond national borders and there is no doubt that the EU has been a force for good in setting cross border environmental standards, which need to be maintained and enhanced. Nevertheless, given the uncertainties brought about by Brexit, this change provides an opportunity for increasing distinctive devolved policy initiatives, but also the need to take a UK wide view of our key strategic natural resources.

Devolution can enable innovation and distinctive models of "made in..." forms of environmental management, but this needs to be supplemented by strong UK wide networks that can enable shared learning and collaborative action. The track record is not good in this respect, with the closure of bodies such as the UK Sustainable Development Commission.

Peter Davies has many years of experience working for sustainable development in Wales and around the UK, and was awarded the CBE for his work in June 2016. Peter served as Commissioner for Wales and Vice-Chair of the UK Sustainable Development Commission from 2005 until its closure in 2011. Following this, the Welsh Government appointed him as Wales' first Sustainable Futures Commissioner, a position he held until stepping down in February 2016. Peter also holds an associate role as Professor of Practice at the University of Wales Trinity St David, and has undertaken a wide range of consultancy and voluntary projects. For more information, visit his website at [www.pdpartnership.co.uk](http://www.pdpartnership.co.uk).



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# Devo-what?

**Robert Ashcroft** explores the history of devolution in the UK and considers what differences Brexit might make.

**B**ritish politics is in a state of flux. The scale (geographical and institutional) at which a country should be governed is a question at the heart of many of the debates currently filling the news. However, this is not a new question; indeed, the issue of devolution, or 'home rule', has been debated for decades.

## HOME RULE

The first attempt to officially implement some form of what we now call devolution can be traced back to 1886 and Prime Minister William Gladstone's *Government of Ireland Bill*, or the First Home Rule Bill, as it is more commonly known<sup>1</sup>. This early devolution was driven from Ireland, although there was discussion that it may be appropriate to extend Home Rule to other parts of the UK. However, devolution was unpopular in Westminster, and political resistance meant it was not implemented until 1921, and then only for Northern Ireland. This system was suspended in 1972, and despite further attempts to introduce devolution in the 1970s, it was not until the election of a Labour government in 1997 that the idea resurfaced.

Tony Blair's Labour government began the process of holding referendums on devolution in Scotland and Wales, and on the Good Friday Agreement (of which devolution was an important part) in Northern Ireland. In each case devolution was approved, and Acts of Parliament then followed to establish the three devolved legislatures<sup>1</sup>. Despite these Acts, the UK Parliament remains sovereign, and retains the power to amend the devolution Acts or to legislate on any devolved matter. However, in practice it is accepted that the UK government will not normally take such an action without the consent of the devolved legislature<sup>2</sup>.

## HOW DOES DEVOLUTION WORK?

Although different electoral practices are in place in the devolved countries, in much the same way that



**“In each of the devolved administrations, 'the environment' broadly speaking, is currently a devolved matter.”**

a UK government is formed, elected members of the devolved legislatures are nominated as ministers to form an executive. Officials in the devolved administrations then answer to these ministers, rather than those in Westminster. The devolved administrations are primarily funded through a block grant from the UK government, which can then be spent on any devolved matter of the administration's choosing, with approval of the legislature.

The scope of the devolved legislatures' powers and legislative competencies are defined in schedules of each of the devolution Acts. These either list subjects on which the legislatures have the power to legislate on (as in the Wales Act 2007), or list “reserved” or “excepted matters” on which the UK Parliament retains sole power to legislate, and state that all other issues are deemed to be devolved (as in Northern Ireland and Scotland). Since 1997, the legislative competencies of the devolved countries have been expanded through a series of reforms and amendments to the original legislation, granting the administrations greater powers.

Whilst powers have been transferring from Westminster to the administrations of Scotland, Wales and Northern Ireland, some in England have also been calling for greater decentralisation of power through devolution to cities and regions. This was a plan of Tony Blair's Labour government, but one which did not come to fruition due to a lack of public support. Under the present Conservative government this idea is gaining traction again.

**WHAT ABOUT THE ENVIRONMENT?**

In each of the devolved administrations, 'the environment' broadly speaking, is currently a devolved matter, and each administration therefore has “The power to legislate autonomously on a range of environmental matters”<sup>3</sup>. However, as the environment is a very broad and highly interconnected policy area, there are some complexities to these arrangements.

In this case, 'environment' can be broadly understood to include natural environment policy, protected areas, air and water quality, flood management, waste management, and other related issues. In each of the administrations, agriculture is also a devolved matter, as are forestry and fisheries in both Scotland and Wales. Although the devolved administrations are bound (as part of the UK) by EU environmental law, there has still been scope for the development of distinctly different approaches in these policy areas. For instance, the recent Welsh Environment Act, which received Royal Assent on the 21<sup>st</sup> March 2016, introduces a very different approach to that taken in the other administrations.

The Act has been designed to embed an integrated approach to environmental management in Wales, which takes sustainable management of resources, climate change, waste, fisheries, and flooding in one piece of legislation<sup>4</sup>. There is a focus on wellbeing and resilience, linking environmental issues with communities and the economy. In Wales, catchment-scale management is also being embedded; a progressive step which other administrations will no doubt follow with interest.

**CLIMATE CHANGE**

Climate change is a slightly complex issue in terms of devolution. The entire UK is bound by the obligations set out in the Climate Change Act 2008. However, the devolved administrations do have a role to play integrating climate change and emissions reduction policies in linked devolved policy areas. As well as contributing to UK wide emissions reduction targets, the devolved administrations are also of course free to take forward their own climate change policies. For example, the Scottish Parliament passed The Climate Change (Scotland) Act in 2009, which commits Scotland to a 42



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per cent reduction in emissions by 2020. The Committee on Climate Change reports that Northern Ireland's Environment Minister and the Welsh Government have also taken advice from the committee and are considering options for climate change policies in their own administrations<sup>5</sup>.

#### ENERGY

Energy policy is also not straightforward. In Northern Ireland, energy policy (with the exception of nuclear) is devolved, however it can sometimes be influenced through legislative consent motions by developments in Westminster, as was the case with elements of the UK Energy Bill 2012.

In Scotland, energy was a reserved matter under the Scotland Act 1998. However, some powers have been devolved through secondary legislation, which allow

Scottish Ministers to increase the development of renewable generation through the Renewables Obligation, and grant them the power to make decisions on the development of power stations both on-shore (if greater than 50 MW capacity) and off-shore (if greater than 1 MW capacity). Planning policy has been a devolved issue since 1998, and so in practice, the Scottish government has had fairly significant influence over the construction of energy generation capacity since this time.

The situation in Wales may be about to change fairly soon, as changes proposed in the Draft Wales Bill 2016-17 would devolve greater powers to Welsh Ministers relating to licencing energy projects. If the new Bill passes, Welsh Ministers will be granted the power to licence onshore oil and gas (including fracking) projects, all onshore wind projects, and any renewable energy projects in the Wales on- and off-shore regions under

350 MW<sup>6</sup>. This Bill is currently before committee in the House of Lords, and is likely to pass in 2017.

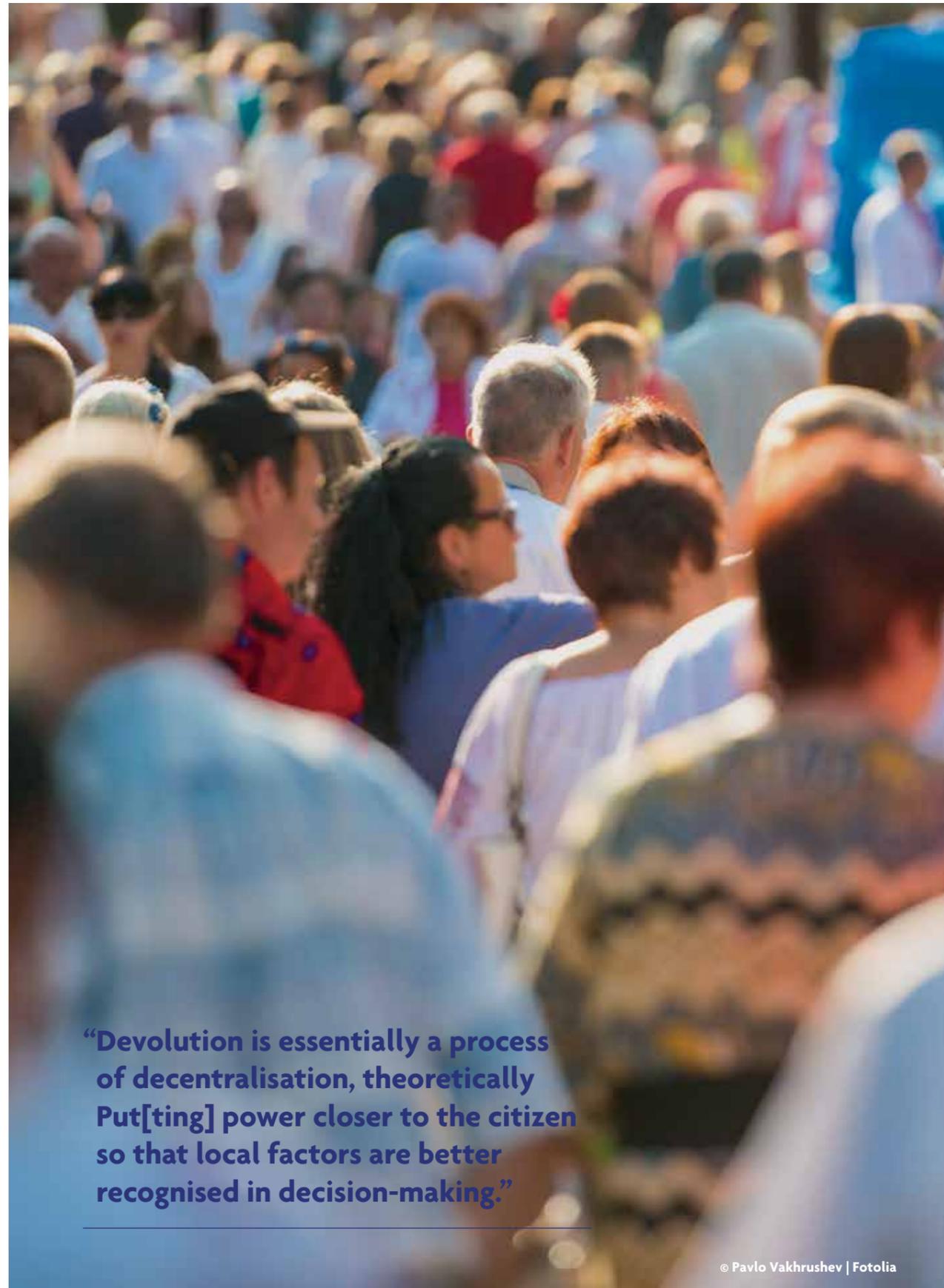
#### THE ELEPHANT IN THE ROOM?

As the brief explanations above demonstrate, devolution is a complex issue, which is compounded further by the interconnected nature of environmental issues and policy areas. However, it seems clear that in some areas, devolution is driving the development of progressive and innovative approaches to environmental management and tackling climate change.

Although technically policy on a range of environmental issues has been devolved for some time, in reality, much of our environmental legislation is currently derived from EU law. As EU law is a reserved matter, the devolved administrations have had fairly limited influence in this area until now. Of course, there

have been divergences in how the administrations have structured their environmental agencies, and how they have implemented this legislation, but much of the legislative detail in this area has been beyond their control. However, using the powers and flexibility available to them, the UK Environmental Law Association (UKELA) and King's College London in 2011 concluded that there had been significant environmental law developments in each administration, which were beginning to follow increasingly different paths<sup>3</sup>.

Although much environmental law developed by the devolved administrations has been driven by EU law, there is nothing to stop Member States (or areas within Member States, as in this case) surpassing EU requirements in their own laws. Scotland's Environmental Assessment (Scotland) Act 2005, for instance, goes further than the Directive it transposes<sup>7</sup>.



**“Devolution is essentially a process of decentralisation, theoretically Put[ting] power closer to the citizen so that local factors are better recognised in decision-making.”**

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In this way the devolved administrations can use their devolved powers to drive environmental progress, whilst also meeting EU requirements.

Once the UK leaves the EU, and the framework of European law no longer applies, the devolved administrations will have greater flexibility on environmental matters, and it is likely divergence will increase.

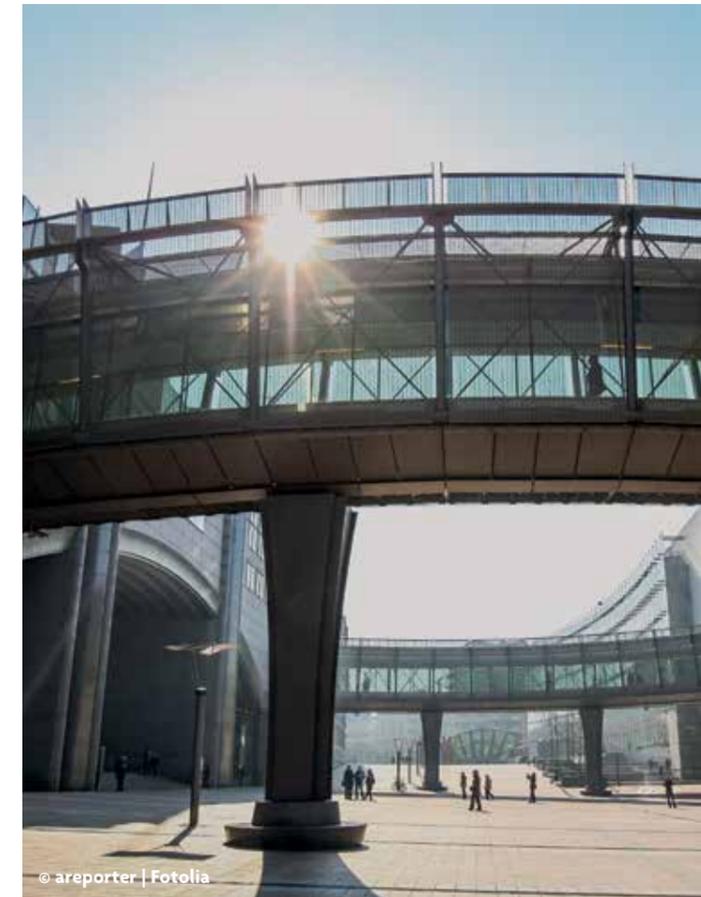
#### LOOKING FORWARD

Devolution is essentially a process of decentralisation, theoretically “Put[ting] power closer to the citizen so that local factors are better recognised in decision-making”. Environmental policy is an interesting case for devolution. There are clearly cases where greater local control on environmental issues would be beneficial. However, where approaches and policies diverge, this can conflict with visions for an integrated, systems approach to environmental management. The coming years are likely to bring great change to the UK’s current legislative framework, and many challenges for the environment. If we are to tackle these challenges, seeking to maximise the benefits and minimise the risks of Brexit, it will be essential to develop a UK-wide vision for environmental policy which each administration can buy into, to ensure a coordinated approach to management whilst building on the successes devolution has delivered so far.

Increasingly vocal demands for repatriation of power from both Brussels and Westminster have re-opened the debate about where decision-making powers on environmental issues should lie. This issue of the environmental SCIENTIST highlights several devolution success stories in environmental policy areas, and reflects on what we can learn from these cases. A series of three Analysis pieces offer a comparative exploration of how one important issue, climate change adaptation, is being addressed in each of the devolved administrations. We also present a perspective from the United States, and further analysis on what Brexit may mean for devolved environmental policy in the UK.

The policy landscape is in flux and the environmental sector needs to embrace new approaches to help shape future frameworks. This journal aims to encourage the reflection required, by carefully evaluating the options available to us, examining congruent domestic and international experiences, and highlighting best practice. **ES**

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# Devolution and resource management

**Jonny Hazell** discusses the approach taken by England, Wales and Scotland to waste and resource management pre- and post-Brexit.

For a subject that is far from the top of the Westminster Government's in-tray, waste and resources policy has proved a surprisingly hot topic for the Scottish and Welsh Governments. This reflects a desire to distinguish themselves using one of the fully devolved policy areas and a greater sense of the economic and environmental rewards of greater ambition on resource management. By contrast, Westminster's ambition has been limited to a desire to comply with the objectives set by the EU. So what are Scotland and Wales doing that England isn't, and what will be the consequences of the UK's vote to leave the EU on the growing gap in policy ambition between Westminster and its devolved partners?

## RESOURCE POLICY IN WALES

Wales has long had great ambition and been a pioneer as a champion for waste and resource management, which has been driven by their constitutional commitment to sustainability and one planet living. They were the first country to introduce a charge for single use carrier bags (in 2010) and they have the highest recycling rate of any part of the UK, hitting 60 per cent between March 2015 and March 2016. Their success is rooted in their 2010 strategy "Towards Zero Waste". This sets out a long term framework for making Wales a zero waste country by 2050. Key provisions include:

- A reduction in the amount of waste generated in Wales of 1.5 per cent a year up to 2050; and
- A target of 70 per cent recycling in 2025.

These economy wide targets are complemented by sector specific strategies for municipal waste, commercial and industrial waste, and construction wastes amongst others<sup>1</sup>.

Of these, their municipal waste strategy is particularly noteworthy given its success in both preventing waste and increasing recycling. At the centre of this strategy is the Collections Blueprint, which sets out the Welsh Assembly government's preferred approach to organising local authority waste and recycling collections. To help local authorities adopt their preferred system, the Government



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has implemented a “Collaborative Change Programme” which provides advice and financial support to pay for the capital costs of change. The success of their strategy is reflected in the facts that between 2006-7 and 2013-14, waste arisings declined by an average of 2 per cent per year whilst recycling increased from 33.4 per cent to 54.3 per cent.

Whilst their achievements are undeniable, it’s worth considering the costs involved. In 2013/14, Welsh expenditure on all waste and recycling activities was £82 per capita, as opposed to £67 per capita in England. The Welsh Government argues that this reflects higher capital investments which will be recouped from lower operational costs (as well as the challenges of their geography), and it is true that in 2015-16, Welsh expenditure per capita had reduced to £78.

#### RESOURCE POLICY IN SCOTLAND

Like Wales, Scotland also has an ambitious plan for reducing waste and increasing their recycling. Their

“Zero Waste Plan” includes a 70 per cent recycling target, separate collection requirements and landfill bans for particular materials such as food waste. As well as these measures, the Scottish Government’s “Household Recycling Charter” has a similar ambition to Wales’ “Collections Blueprint”, in trying to increase the consistency and quality of materials collected by local authorities for recycling.

Scotland’s Zero Waste Plan is largely focused on improving the treatment of waste. So to complement this, the Scottish Government has developed a circular economy strategy, “Making Things Last”, which includes a holistic focus on waste prevention activities such as eco-design and remanufacturing. A notable feature of this strategy is support for the Scottish Institute of Remanufacturing, one of just six centres of remanufacturing expertise in the world and the only one in Europe. The Scottish Government is also providing extensive advice and financial support to increase the resource efficiency of Scottish businesses and help them

adopt circular economy business models through the publicly funded Zero Waste Scotland, Resource Efficient Scotland, and Scottish Enterprise campaigns.

Despite these strategies, action on the ground is taking a while to catch up with the political ambitions. For example, Scotland’s recycling rate was 44.3 per cent in 2015, lower than both England and Wales. But given the willingness to invest in improving resource management in Scotland, it seems likely that their performance will improve.

#### POLICY IN ENGLAND AND THE IMPACT OF BREXIT

Unlike its neighbours, England has not developed any strategy or policy framework to go beyond the current EU targets. This raises a potential headache for the devolved administrations in Scotland and Wales as their efforts to improve resource management could be undermined by opportunities to dispose of waste in England at lower cost, particularly for commercial and industrial wastes. Whilst there are proposals in the

EU’s “Circular Economy Package” to raise the targets and ambitions of the EU policy framework to similar levels to those of Wales and Scotland, it is now uncertain whether England would have to comply with these. If the UK are to remain members of the single market on terms similar to Norway, all the Directives that provide the framework for most of England’s waste and resources policies will still apply.

But, if it’s a hard Brexit, the future is much less certain. Some targets, such as the 2020 50 per cent recycling target nominally remains in force having been transposed into UK legislation, but whether it would be enforced without the threat of an EU legal challenge is doubtful. Other rules implemented through EU regulations would be scrapped immediately, the most significant of which are the Ecodesign standards that make products longer lasting, easier to repair and recycle. Moreover, given the amount of time and central government resources that will be taken up by Brexit, it seems unlikely that we can expect any new policy on waste and resources in England. But amidst this gloomy prognosis, devolution provides a source of hope. As the government continues with its devolution agenda, newly empowered city regions have the opportunity to go beyond the limitations of central government policy. London already has a circular economy strategy, and as in Wales and Scotland, this is driven by a sense of an opportunity for local employment and economic regeneration, that greater resource management can deliver. If more English cities follow the example of the UK’s other devolved administrations, then they will be the driver of policy innovation and ambition.

ES

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# Climate change impacts and adaptation in Scotland

**Anna Moss** discusses how Scottish Government policy has shaped their country's approach to climate change.

Climate change is already affecting Scotland, with observed increases in seasonal temperatures, annual rainfall and sea level all beginning to have a measurable impact on our natural and built environments. Whilst the accumulative impact in Scotland is less severe than in many parts of the world, for individuals, businesses, communities and sensitive species or habitats the consequences can be significant.

**“This is happening now, and how we respond will affect not only individual species and our distinctive landscapes, but also our lifestyles and economy.”**



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Climate change is one of the greatest challenges facing Scotland's natural environment. The rate of change threatens species and habitats that are unable to adapt quickly enough. This is happening now, and how we respond will affect not only individual species and our distinctive landscapes, but also our lifestyles and economy. We are already seeing shifts in species distribution, for instance bird species wintering at higher latitudes, and range shifts in butterflies. However, movement to new areas depends on suitable habitat being available and some species can only survive in a very narrow range of environmental conditions (e.g. snow bed specialists), or are already at the southern limit of their range in Scotland or restricted by the landscape (e.g. cold water species in lochs). The changing climate is also impacting on the distribution and abundance of invasive species, pests and diseases for example:

- It is believed that an increase in intense rainfall episodes coupled with warmer springs may have optimised conditions for spore dispersal of *Dothistroma* ("Red Band") needle blight, which has become the most significant disease affecting coniferous trees in the UK and poses a particular threat not only to Scotland's commercial forestry, but also to native Caledonian pinewoods;
- Two of the pests and diseases most economically damaging for Scotland's agriculture are both significantly influenced by climate. Potato late blight

epidemics are largely driven by the weather with periods of free moisture (high humidity, dew and rainfall) and moderate temperature being optimal for pathogen infection and spread. Liver fluke spends much of its complicated life-cycle outside the host cattle or sheep, either within vector snails, or as cysts or eggs on pasture; its prevalence, seasonality and geographic spread are very much affected by temperature and rainfall.

As with the rest of the UK, flooding currently poses the most critical risk to the built environment and infrastructure. Estimates of the cost of flood damages to property in Scotland varies from £200 - £250 million per year. Individual flooding events can have a huge cost - losses of £30 million were estimated for the Tay/Earn flood in 1993 and £100 million for the Strathclyde flood in 1994. These events damage homes, businesses and communities, disrupt transport, and cause local economic losses. But there is also a need for research to improve our understanding of:

- the impacts of flooding beyond the initial phase of recovery;
- the impacts on mental health; and
- the disparity between impacts at community level, as currently we are not able to count the true cost at individual, local and national level.

#### IS SCOTLAND UNIQUE?

Scotland has a third of the UK's land area, but only about 8 per cent of the population. There are therefore large remote areas with very low population density, including around 100 inhabited islands. This can influence the character or magnitude of vulnerability and realised impacts for those regions. Increases in flooding and landslides threaten the transport network particularly in areas with single arterial routes. Potential increases in storminess (though more evidence is required) are a particular threat to island communities if ferries remain in port for safety, and also cause havoc to the transport network when major bridges close.

Although not unique to Scotland, there are some issues which are more critical due to the relative importance in comparison to the rest of the UK. For example, Scotland contains over 90 per cent of the UK's surface freshwater, over 60 per cent of the UK's total sea area, and two thirds of the UK conifer woodland and peatland. Therefore impacts felt right across the UK in these environments are relatively more critical within Scotland. A large proportion of Scotland's peatlands already have evidence of degradation and warmer/drier conditions will exacerbate the impact on an already stressed system. Changes to water temperature, flow and water quality will be critical for many important freshwater species in Scotland's lochs and rivers. Increasing marine temperature

and acidification is already seeing an increase in warm water species and threatens Scotland's shellfish industry.

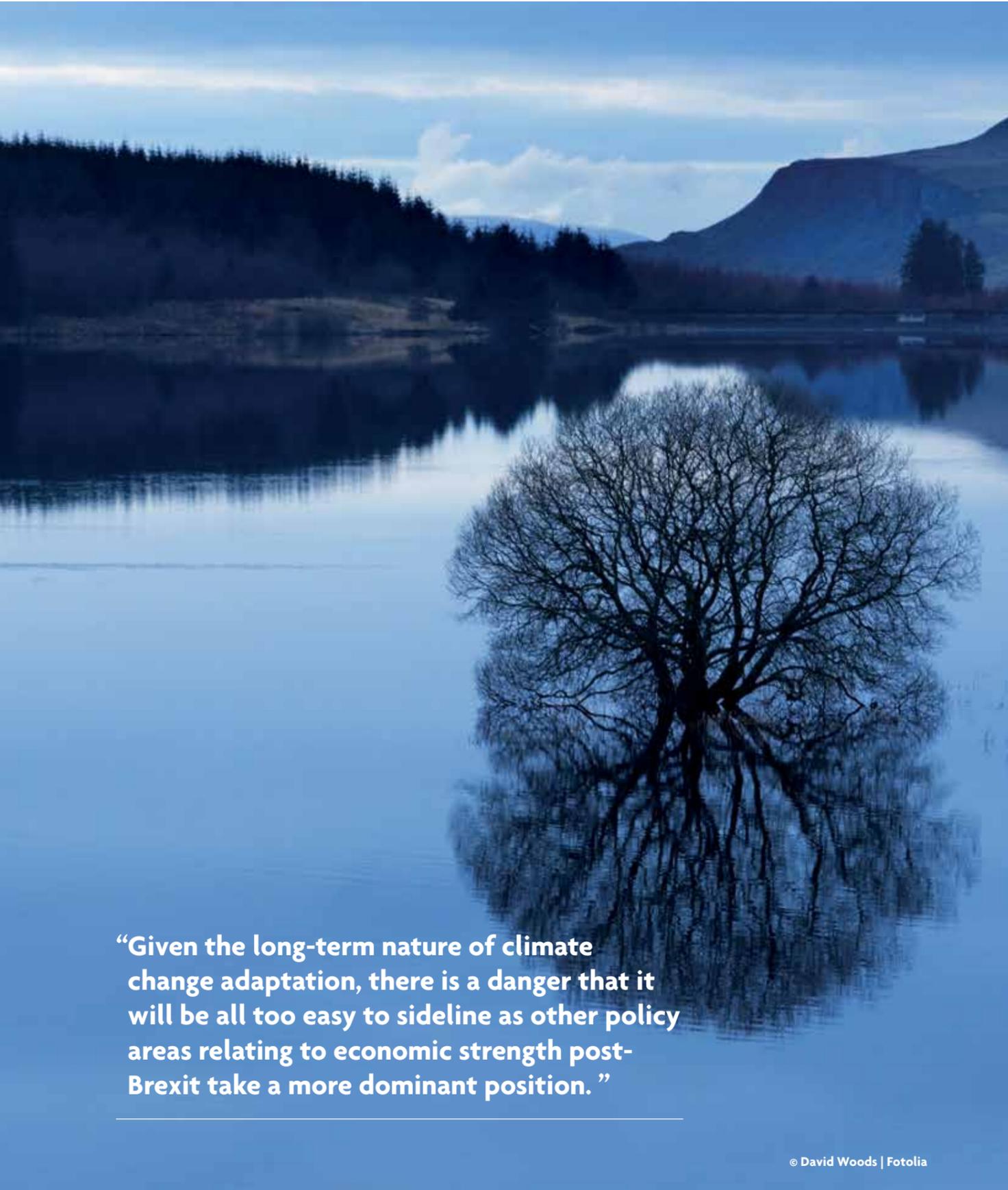
There are also potential opportunities for Scottish agriculture, which probably outweigh those for many parts of the UK which are more restricted due to water availability such as:

- an increase in the growing season;
- an increase in types of crops that can be successfully grown.

However, there are some areas where more water-hungry crops may be restricted by the need to reduce reliance on irrigation (potatoes and soft fruits) as well as increasing risks regarding soil condition (erosion and loss of soil carbon).

#### CLIMATE CHANGE POLICY IN SCOTLAND

Climate change policy in Scotland responds to both a UK and a Scottish framework (the UK Climate Change Act 2008 and the Climate Change (Scotland) Act 2009). As a requirement of the UK Act, a Climate Change Risk Assessment (CCRA) for each of the nations is conducted every five years (the 2017 Evidence Report has just been published). This forms the basis for adaptation policy in Scotland and the first Scottish Climate Change Adaptation Programme (SCCAP), published in 2014,



**“Given the long-term nature of climate change adaptation, there is a danger that it will be all too easy to sideline as other policy areas relating to economic strength post-Brexit take a more dominant position.”**

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addresses the risks and opportunities identified for Scotland and sets out the Scottish Government’s policies and proposals to address them.

#### ADAPTATION IN SCOTLAND

Climate change adaptation is becoming increasingly embedded in policy and practice, though there is still a long way to go to ensure adaptation is mainstreamed throughout all sectors and at all levels, and strategies/principles need to be backed up by focused measures and management changes.

The scale of the impact is often related to the general resilience of the environment or system. For example, the ability for species to track suitable climate space depends on the availability of suitable habitat to move to, but in many cases the surrounding habitat may already be fragmented and/or in poor condition. Strengthening resilience is key in many areas, particularly in the natural environment. Rising temperatures or changes to precipitation are now inevitable, therefore often the most effective action is to focus on reducing other pressures, thereby reducing the vulnerability and increasing resilience. An emphasis on resilience is therefore a key part of a number of policy areas (e.g. The Scottish Biodiversity Strategy) and Scotland’s new National Centre for Resilience is expected to play an important role in taking the resilience agenda forward, supporting adaptation and ensuring communities across the country are fully and adequately prepared.

Often a whole suite of measures need to be in place to maintain or improve resilience. For example, if we consider Scotland’s woodland, there are a large number of policy areas that combine to contribute to adaptation:

- increasing diversity of forest tree species (a key adaptation strategy identified in Forestry Commission Scotland’s (FCS) Climate Change Programme);
- improving habitat connectivity (e.g. Central Scotland Green Network);
- the prevention of excessive deer browsing (Forest Enterprise Scotland Deer Management Strategy); and
- clearing invasive non-native species such as Rhododendron (clearance programmes have received targeted funding through the EU, Scottish Forestry Grants Scheme, Scottish Rural Development Programme and Scottish Natural Heritage (SNH) discretionary funds).

There is an increasing awareness that there is often the need to take a whole system approach.

For example, the need for landscape scale conservation (large-scale collaborative land management projects that aim to improve an area’s ecological health to benefit people and biodiversity), is recognised in the Scottish Government’s Land Use Strategy, and the Scottish Biodiversity and Forestry Strategies. A Landscape-Scale Conservation Working Group has been formed to enable greater collaboration and the sharing of good practice among stakeholders. Participating organisations include SNH, FCS, Scottish Government, Scottish Environment Protection Agency, Local Authorities, Scottish Wildlife Trust and RSPB Scotland. This type of



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partnership working and knowledge exchange, can help to build the overall resilience of whole sectors, and there are a growing number of examples:

- The Climate Ready Forest Network (a partnership between FCS, Forest Research, ClimateXChange and private forest owners), aims to support the forest sector in Scotland to adapt to climate change;
- Diffuse Pollution Management Action Group (a partnership which includes the National Farmers Union Scotland, Scottish Land and Estates, Scottish Water, FCS, and SNH) that helps to ensure effective delivery of River Basin Management Plan actions with input from a cross section of rural, environmental and biodiversity interests.

The SCCAP contains a strong emphasis on the need to improve the overall knowledge base that is critical to enabling informed management and reducing potential maladaptation.

However, significant gaps in knowledge remain and these need to be filled to improve monitoring and evaluation of adaptation actions. The recent interim assessment of the SCCAP by the Adaptation Sub-Committee (of the Committee on Climate Change) has also highlighted the need to ensure that appropriate milestones and timescales are also set in order to ensure that the process is effectively managed.

#### DEVOLUTION AND ADAPTATION

The Scottish Government has been able to set out (and achieve) more ambitious targets for carbon reduction than the rest of the UK, and has shown a far greater commitment to renewable energy than the Westminster Government (with a target to deliver 100 per cent of electricity consumption from renewables by 2020).

Unique to administrations in the UK, Scotland has a coordinated Land Use Strategy which sets out principles and proposals for sustainable land use and accounts for changing suitability of the land due to climate change. This is critical for coherent management of natural resources and has the potential to limit maladaptation through competing demands.

Effective policy is built on the availability of the best knowledge delivered in an accessible and timely fashion. For this reason, the Scottish Government has established centres of expertise in areas of high policy importance to provide independent advice, research and analysis and it is generally accepted that this model is working very well. One of these centres, ClimateXChange, is focused specifically on adapting to the changing climate and the transition to a low carbon society. Monitoring climate change adaptation is a new area of policy and practice, and ClimateXChange has been working to establish baseline information and knowledge of existing trends with an extensive suite of indicators linked to both the CCRA and SCCAP, to

help policy makers and others to understand how well Scotland is adapting to climate change and highlight where policy action may be needed to encourage and strengthen adaptation.

#### THE IMPACT OF BREXIT

The EU has played a crucial role in the provision of climate change related legislation, guidance and funding for adaptation, resilient infrastructure projects and research (e.g. the UK is set to receive €1.9 billion for climate change adaptation and risk prevention during the current EU budget 2014-20), and there is great uncertainty as to the extent that the Westminster Government will be willing to pick up this bill. The existing regulatory structures will need to be replaced or even strengthened, but many people working in this area have little faith that the current administration has that commitment. Merging the Department of Energy and Climate Change with the Department of Business, Energy and Industrial Strategy, sent a worrying message and cannot be seen as anything other than a de-prioritisation of climate change as a whole (and adaptation was already something of a 'poor cousin' to mitigation). Uncertainty over future European funding is already impacting research, as European consortiums are becoming nervous of being led by UK institutions or even of their inclusion at all.

Given the long-term nature of climate change adaptation, there is a danger that it will be all too easy

to sideline as other policy areas relating to economic strength post-Brexit take a more dominant position. Climate change is a global issue, and dealing with the consequential risks (including global issues of food security and climate migration) and the need to adapt to them requires cross-border, regional coordination. Therefore, just as mitigation needs global solutions and agreements, so there will be an increasing need for international dialogue and cooperation to strengthen not only more fragile nations, but our own resilience also. Thankfully, the current Scottish Government are showing a desire to remain fully immersed in European and international dialogue and a determination to strengthen Scotland's commitments with regard to mitigation. Hopefully this will also drive continued commitment to adaptation; the challenge will be with regard to the areas over which we have no control. **ES**

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## Balancing national and regional involvement in climate change adaptation

**Jane E McCullough** and **Stephen McCabe** discuss the impact of national and regional climate change policy on the diverse geographical and economic situation of Northern Ireland.

Northern Ireland's (NI) environment, economy and geographical location are unique within the UK. The region enjoys a variety of unique terrestrial, water and marine landscapes, and for its size, is one of the most geographically diverse areas of the planet (flowing from a complex geology and topography). The economic context differs from the rest of the UK due to a higher proportion of turnover gained through small to medium enterprises (between 14 per cent and 27 per cent more than elsewhere in the UK<sup>1</sup>). The region is also the only part of the UK to share a land border with another government. Alongside these unique characteristics, climate projections vary from the rest of the UK, following the north west/south east split across the British Isles largely dictated by the Atlantic signal. Plans to support the region in planning and

preparing for climate change adaptation must therefore recognise and respond to these unique characteristics.

### A CHANGE IN CLIMATE

NI has been getting warmer. The 2005-2014 decade was 0.7 °C warmer than the 1961-1990 average, sea-level has risen by around 1.4 mm per year and extreme weather events have become more frequent. The Climate Northern Ireland (CNI) website has a graphic timeline<sup>2</sup> of these events, which illustrates the types of weather events experienced (including floods, wind damage and cold snaps) and their impact on society.

The most recent projections suggest that NI is expected to continue getting warmer in summer and winter (mean summer temperature increase of between 0.8 °C and 4 °C under a medium emissions scenario,

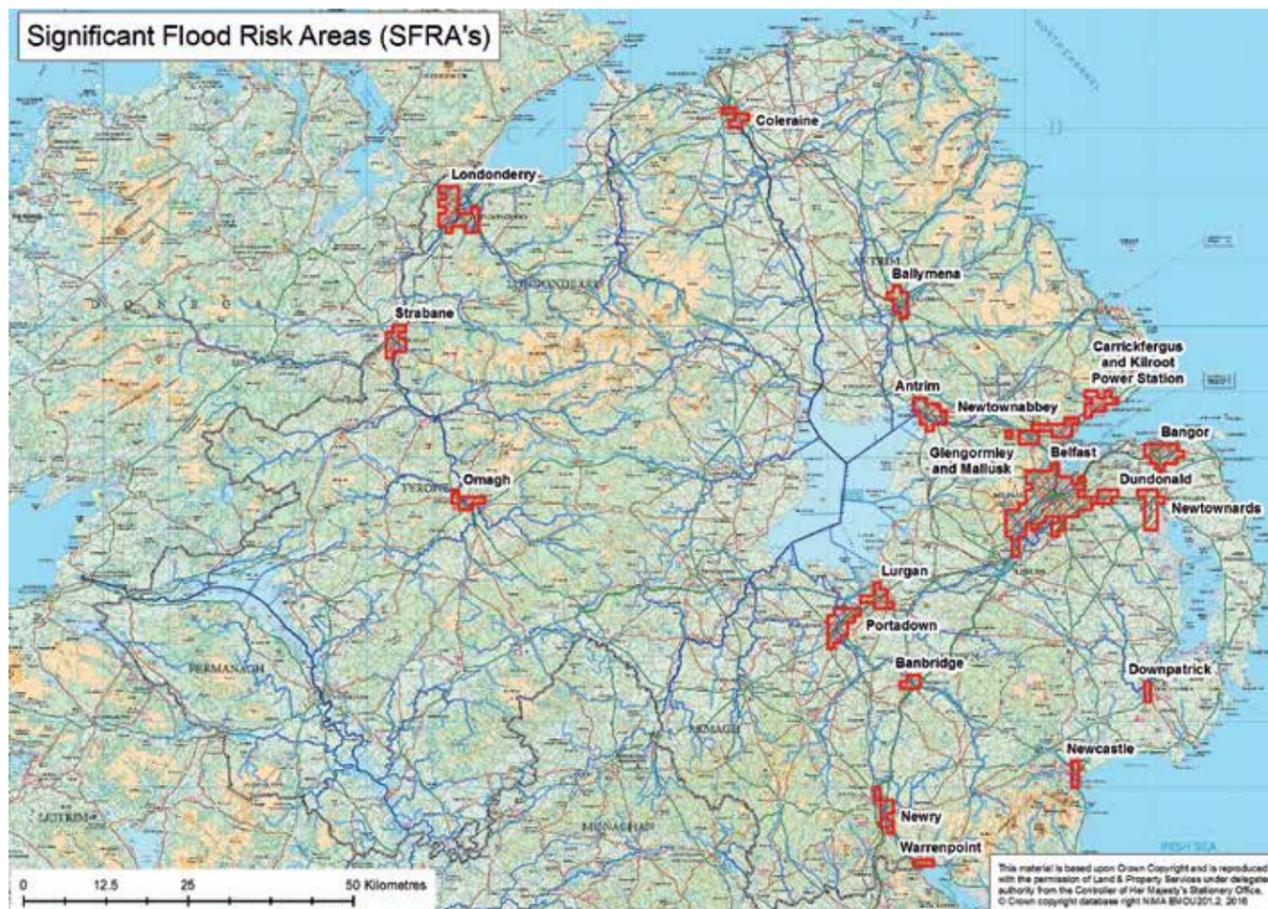


with more pronounced warming at night-time and inland<sup>1</sup>). Summer precipitation is expected to reduce by up to 41 per cent and winter precipitation to increase by 27 per cent by 2100<sup>1</sup>. Storminess is likely to increase in winter and in late summer in response to increased convective activity<sup>1</sup>.

Understanding of the climate change risks facing different aspects of society and the natural environment in NI varies. Commonly, where an impact is already being observed, a sense of urgency has led to research being undertaken in response to observed threats. However, regarding the many risks associated with climate change that are more complex and systemic in nature, the state of adaptation policy and action in NI may be more characterised by lack of information and evidence.

The most blatant and urgent climate change risk facing NI is flooding from various sources; pluvial flooding, surface water flooding and sea-level rise. Serious local

flooding events have been experienced each year since 2007 and are expected to become more frequent in response to climate change. Lough Neagh in central NI is the largest freshwater body in the British Isles and is largely surrounded by agricultural land and rural settlements. In 2016, the three winter storms which hit the UK and Ireland in quick succession led to unprecedented rainfall and consequent flooding which impacted homes, farms, business and wildlife on the shoreline. Belfast city centre, which has been identified as a significant flood risk area by the Rivers Agency, has experienced several serious “near misses” in recent years, while surrounding residential areas were hit with flooding episodes. In response, a government programme of flooding research and planning has been developed, part of which delivered the Northern Ireland Flood Risk Maps<sup>3</sup>, as required by the EU Floods Directive. This work has found that currently in NI, 1 in 18 properties are at risk of flooding<sup>4</sup>, including 46,000 homes<sup>5</sup>. As indicated in **Figure 1**, flooding is a risk in both rural and urban areas.



▲ **Figure 1. Significant Flood Risk Area map. Provided by the Northern Ireland Rivers Agency.**

**“As NI is situated within the UK and shares an island with the Republic of Ireland, climate change adaptation planning must negotiate and collaborate with both governance systems.”**

#### GOVERNANCE AND ADAPTATION PLANNING

Governance is guided by the UK Climate Act, UK the Climate Change Risk Assessment (CCRA) and the requirement for a devolved region adaptation plan. These require NI, as a devolved region, to submit evidence into the CCRA undertaken by the UK Government on a five yearly cycle. From this, *the Climate Change Risk Assessment Evidence Report: Summary for Northern Ireland* is developed. This gives NI, as a small region, the opportunity to benefit from the centralised expertise of the Committee on Climate Change. Yet for many issues, NI is unable to provide the evidence required to effectively undertake an assessment. There are two main barriers to evidence submission. First, many of the issues have not garnered local research attention or funding (or NI lacks the capacity to undertake the research) and, second, accessing or bringing together the existing research in a coordinated way can be challenging. However, in the recent CCRA evidence gathering exercise, CNI coordinated a more comprehensive submission of research from academia.

Due to lack of cross-party support, and resistance from some sectors, NI is the only part of the UK not to have a Climate Change Act. There is broad recognition that our climate change is changing, and that there is a need to prepare and adapt to protect and enhance society. However, stakeholders have identified that political will and leadership will be a 'make or break' factor in the success of adaptation to climate change over coming years. As climate change risk assessments are undertaken for the UK as a whole, NI is on an important journey toward finding the optimum balance and engagement between UK and local resources, expertise and policy. Ultimately, this work also feeds into the development of the Northern Ireland Climate Change Adaptation Plan<sup>6</sup> (produced by the then Department of Environment – now Department of Agriculture, Environment and Rural Affairs, DAERA). The existing plan takes a government-focused approach by identifying primary areas for action (covering flooding, water, natural environment, and agriculture and forestry) – an approach that is expected to change with the next iteration of the plan (due in 2018) toward taking a more integrated and outward looking perspective on challenges and potential solutions.

Of course, the island of Ireland is one bio-geographical unit – the earth surface and atmosphere system has no regard for the border. As NI is situated within the UK and shares land border with the Republic of Ireland, climate change adaptation planning must negotiate and collaborate with both governance systems. Close working with other UK regions and cross-border working with the Republic of Ireland is essential for climate change adaptation planning and will be necessary for



successful implementation. Official structures include the North-South Ministerial Council, intended to foster collaborative working on environment, where common policies and approaches can be agreed. The need for cross-border working on climate change adaptation will become even more important as Brexit progresses, with uncertainty around environmental regulation, currently taking cues from EU Directives (which will still be in place in the Republic of Ireland). Cross border working will thus have to negotiate both cross country regulation, but also EU and non-EU regulation. Ireland's National Climate Action and Low Carbon Development Bill provides the national policy context for a strategic national adaptation response to climate change which aims to achieve a transition to a competitive, low carbon, climate resilient and environmentally sustainable economy by 2050 – a policy landscape with which NI will have to interact, and complement.

**PROMOTING ADAPTATION THROUGH PARTNERSHIP**

Climate Northern Ireland (CNI) was set up to increase understanding of the impacts of climate change in NI and promote action to address climate change across all sectors of society by:

- providing information;
- supporting forums;
- promoting action; and
- supporting policy development.

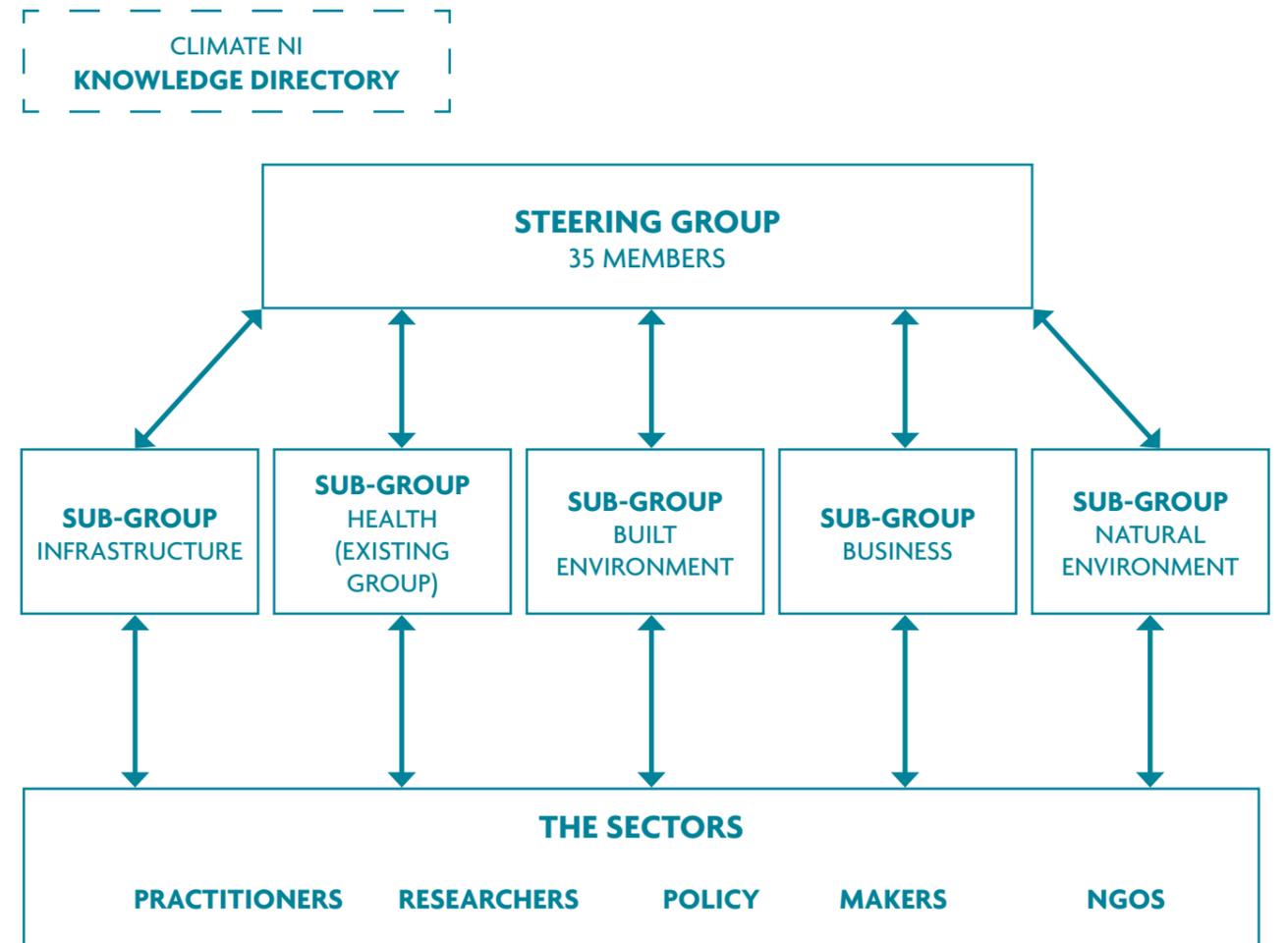
The difficulty of providing evidence to the UK CCRA was highlighted above, and CNI seeks to provide solutions to those NI barriers through promoting awareness of research gaps, and also working strategically to bring

**“Due to lack of cross-party support, and resistance from some sectors, NI is the only part of the UK not to have a Climate Change Act.”**

existing knowledge together for the benefit of policy makers. CNI is currently developing a new institutional structure to support partnership working (Figure 2).

This broad structure aims to support a partnership approach to sector based awareness raising and policy development. As the impacts of climate change are specific to the vulnerabilities of a region and therefore often require a place based approach, CNI plans to use these groups as a network and expertise resource for such work. To raise awareness of the climate change expertise available, CNI has developed an online knowledge directory featuring people with expertise in climate change relevant to NI.

This partnership structure was used by CNI in development of the “Planning for Climate Change: Stakeholder Engagement Report (2015)”. Four sectoral workshops were carried out in June 2015 in collaboration with leading sectoral organisations (the Institution of Civil Engineers, Business in the Community and Northern Ireland Environment Link). The sectors addressed were “Infrastructure”, “Business and



▲ Figure 2. Climate Northern Ireland Partnership Structure



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Industry”, “Natural Environment and Rural Economy” and the “People and Built Environment sectors”. The objectives of the workshops were to:

- Identify and prioritise the climate risks facing NI;
- Evaluate the reach and risks addressed by the current Northern Ireland Climate Change Adaptation (NICCAP) Programme 2014-2019; and
- Evaluate current climate change adaptation and knowledge.

The report flowing from these workshops, and finalised by the CNI Steering Group, has been used to:

- Identify gaps in scientific evidence about climate risks facing NI. CNI will share the gaps in evidence with relevant research communities to encourage evidence gathering;
- Identify common risks and proposed actions across different sectors. CNI will use its network to try and bring together stakeholders concerned about similar issues with the aim of supporting action;
- Develop a strategy to support awareness raising and adaptation action where required;
- Inform the UK Adaptation Sub-Committee for consideration in the Climate Change Risk Assessment for Northern Ireland 2017; and

- Support DAERA in evaluating the aims and reach of the current Northern Ireland Climate Change Adaptation programme (2014-2019).

The structure also aims to facilitate stakeholders to bring adaptation issues to the attention of the wider network and to propose action. For example, the infrastructure group has recently highlighted the need to bring key people together to forward the uptake of Sustainable Urban Drainage Systems (SuDS) in NI. This group, with support of CNI, organised an event to bring together policy makers, designers, developers and environmental NGOs to discuss the risks, opportunities, enablers and blockers to the uptake of SuDS with the aim of developing a roadmap which all stakeholders support.

In response to cross border complexities and the need for closer partnership working, CNI, along with Climate Ireland, is working towards the establishment of an All Ireland Climate Change Adaptation Network to improve collaboration on a more holistic approach to improving resilience. This will include extension of the n-line knowledge directory to all of the island.

#### CONCLUSIONS

The complexity of designing a coherent response to climate change demands genuine partnership working across sectors and borders. So far this has been piecemeal, but we are hopeful for a more strategic, outward, collaborative approach going forward in NI. CNI will be crucial to such an approach. The challenge

remains to reach local communities with the adaptation and resilience message, promoting locally relevant and effective responses to the impacts that are seen on the ground.

ES

**Jane E McCullough** coordinates the Climate Northern Ireland programme, which aims to support Northern Ireland in becoming resilient to the impacts of climate change through awareness raising, partnership working and evidence gathering for policy development. Jane studied architecture, is an Associate Member of the Royal Society of British Architects, spent several years as an architectural researcher at Queen’s University Belfast and is still involved in architectural practice. She has a particular interest in climate change mitigation and adaptation in buildings and the wider built environment.

**Dr Stephen McCabe** works for Northern Ireland Environment Link. Stephen is an environmental geomorphologist with a strong background in heritage science and physical geography. He has managed government-funded research projects with important policy implications, including several projects investigating the complex impacts of climate change on stone-built heritage. He acts as a peer reviewer for a wide range of international environmental science journals. Stephen is a Chartered Geographer, an elected Fellow of the Royal Geographical Society, a member of the British Society for Geomorphology, and a Visiting Research Fellow at Queen’s University Belfast.

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# Climate change adaptation in Wales: Much ado about nothing?

**Andrew Flynn, Andrew Kythreotis** and **Alan Netherwood** outline the challenges that the Welsh Government face in moving from climate change and sustainable development policy rhetoric to delivery.

Climate change and sustainable development have been major policy challenges for a number of countries in Europe. Since the late 1990s in Wales, climate change policy has been driven by the Welsh Government which, under the Government of Wales Act 1998, created a devolved legislative body and a new organisation to promote sustainable development in all of its work. So whereas for many levels of government sustainable development is an aspirational goal, in Wales it is a legal duty that is to be delivered by the Welsh Government. Devolution and a commitment to sustainable development has provided the framework through which climate change adaptation thinking has taken place.

Delivery of a novel policy issue, like climate change adaptation, has proved to be problematic. The

onus has been on the Welsh Government to develop its own capacity to think through how it should mainstream novel policy issues and promote them with its partners (e.g. local government). In doing so, the emphasis for the Welsh Government has been on an inclusive process of preparing and maintaining policy. In this paper, it will be outlined how forms of governance are changing, how climate change adaptation policy is being developed, and the challenges that the Welsh Government faces in moving from policy rhetoric to delivery.

## CLIMATE CHANGE POLICY IN WALES

Climate change policy in Wales has developed rapidly over recent years, driven by the UK Government Climate Change Act 2008. There is a political commitment to a 3 per cent annual emissions reduction in areas of devolved responsibility. This has been reinforced in a



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▼ Table 1. Delivering policy in Wales: ideal models of governance

FEATURE	COERCIVE	PARTNERSHIP
<b>Targets</b>	Set from centre, prescriptive	Agreed by consent
<b>Means to achieve goals</b>	Hold to account and audit, rule bound relationships	Educate and spread knowledge
<b>Agendas</b>	Likely to be different agendas held by different actors	Seek shared agenda
<b>Policy entrepreneurialism</b>	Authoritative figure	Network, discursive
<b>Lower level autonomy</b>	Minimise local discretion	Accept local discretion and autonomy
<b>Knowledge</b>	Concentrated at the centre and to be dispersed from the centre outwards	Knowledge diffused and seek means to utilise local knowledge
<b>Openness</b>	Limited and to favoured few	Consultative and participatory
<b>Views of lower tier of government/public bodies</b>	Hierarchy	Partner in policy delivery
<b>Funding</b>	Ring fence budgets	Budgets determined according to local priorities within a common agenda
<b>Policy outcomes</b>	Seek uniformity around a baseline because monitoring for compliance with targets	Accept variability above baseline because seeking improvements in practice and spreading knowledge

strong policy framework for mitigation<sup>1</sup> via the Welsh Government's Climate Change Strategy of 2010, and subsequent Delivery Plans and Reports<sup>2,3,4,5,6,7,8,9</sup>, overseen by the Climate Change Commission for Wales (CCCW), established in 2007. However this focus on climate change by the Welsh Government has not been translated into the performance frameworks at a local government level, among the 22 unitary authorities and three National Parks. The policy framework for climate mitigation is relatively strong in Wales, whereas that for adaptation is weak. The adaptation reporting requirements of public bodies contained within the Climate Change Act 2008, have been interpreted by the Welsh Government as voluntary rather than mandatory. Additionally, there is

no statutory requirement for the Welsh Government to prepare a "National Adaptation Plan" in response to the findings of the UK Climate Change Risk Assessment Evidence Report 2012.

The picture that emerges is one in which climate change is a major policy issue.

There is action – through legislation at the UK government level – but a hesitant response within Wales. The pressing nature of climate change and the Climate Change Act 2008 should have helped nurture conditions that were ripe for significant policy development in Wales. Indeed, the Act might have been



seen to open a window of opportunity in Wales, and one that was widened by:

- The UK Climate Impacts Programme (UKCIP) – Their data provided Welsh specific information on climate change, thus establishing an evidence base;
- A series of Welsh Climate Change Risk Assessments – This looked in detail at how assets and services could be affected by climate change<sup>5,6</sup>;
- A Welsh Local Government Association, *Changing Climate Changing Places* – A pilot project funded by the Welsh Government to inform the approach to adaptation within local government in Wales. This involved four councils: Cardiff, Flintshire, Gwynedd and Rhondda Cynon Taff, with the help of UKCIP, Environment Agency Wales, Countryside Council for Wales (now both part of Natural Resources Wales and Welsh Government); and
- The Climate Change Commission for Wales.

Below, the delivery of climate change adaptation policy, which has been patchy despite these favourable conditions, is explored.

#### GOVERNANCE FOR POLICY MAKING AND DELIVERY

Within Wales, as a consequence of devolution, the traditional form of governance based on hierarchies that typify British government are, to some extent, being subverted by a commitment to a more partnership based approach. Table 1 illustrates the key features of coercive and partnership based models of governance.

Applying this model to the experience of climate adaptation in Wales is informative, as it reveals how complex policy making and delivery can be in practice. At a national level, climate change adaptation policy development has generally been coercive and a response to external stimuli such as, the Climate Change Act. The Welsh Government has set out *its own* responsibilities, activities, funding and targets, but been more reluctant to extend these to other actors. This highlights the limitations of partnership working in which both the Welsh Government and its partners have limited capacity. The result is voluntary and uneven local policy delivery.

Much of the climate change adaptation activity at a local level has been partnership based, exhibiting key features listed in Table 1, and often independent of the Welsh Government and its strategic vision. This approach is illustrated by a small number of partnerships in local government progressing adaptation planning in spite of the weakness of governance structure: Flintshire, Carmarthenshire, Torfaen and Caerphilly have all completed risk assessments, collected local data, focused on shared risks and developed adaptation plans with local service partners focusing on essential infrastructure, asset management and in the latter case, rural economies. The dominant debates though in the public sector are how key policy actors should tackle austerity and public sector reform, and these have taken precedence in most authorities.

Since 2008, although climate change has had a high policy profile, it has rarely demanded action from key actors concerned with adaptation (e.g. local government).



**“There is a clear disconnect between the aims of the national 2010 Climate Change Strategy and the willingness of local actors to get involved in implementing it.”**



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For instance, the Welsh Government provided no statutory guidance to require change, only voluntary policy guidance on assessing risk and preparing action plans. Revealingly, annual reporting on climate change activities has been undertaken via the CCCW, a loose coalition of public bodies, agencies and academics, which has overseen Welsh Government work on climate change. There is a clear disconnect between the aims of the national 2010 Climate Change Strategy and the willingness of local actors to get involved in implementing it. A growing frustration at the pace and breadth of change on climate change adaptation is now leading to suggestions that a more coercive style of governance should be promoted that could introduce statutory guidance on climate adaptation. For example, the national 2010 Climate Change Strategy included a commitment to produce five “Sectoral Adaptation Plans” (SAPs), which were widely regarded as the equivalent

of a Welsh Government “National Adaptation Plan”, similar to that implemented by DEFRA in England. But the failure to make real practical progress on any of these (with the exception of still unpublished work on the Natural Environment SAP) is therefore all the more concerning – and a reflection of the Welsh Government’s apparent lack of priority to adaptation. Lack of progress on developing the SAPs led to the CCCW Adaptation Subgroup feeling compelled to step into this policy void to capture non-state views and potential actions in relation to three SAPs: Business and Tourism, Communities, and Infrastructure. The willingness of individuals to give their time and thought to this is significant from a partnership point of view.

Indeed, the lack of a coherent and ambitious approach to climate change adaptation is certainly not caused by the lack of science, data or evidence, or the willingness



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of non-state adaptation actors to work with the Welsh Government. Although this is part of the Welsh Government’s framing of the issue, it is rather by:

- a lack of statutory guidance from the Climate Change Act 2008 which has allowed policy to drift;
- an austerity agenda that has focused decision makers’ attention on the cost of services;
- competing public service agendas (health) with well-established and well organised advocacy groups;
- reduced capacity in governmental policy units to undertake independent thinking and analysis, highlighting the weak capacity of government in Wales;
- public service reform in which attention is focused on issues of scale and service delivery for traditional government activities and in which climate change adaptation is marginalised; and
- a Climate Change Commission for Wales that has limited powers and authority.

These are significant challenges. In the section below, it is addressed as to whether or not they might be tackled in the near future.

#### THE WELL-BEING OF FUTURE GENERATIONS ACT 2015

At a national level, climate change adaptation has now been reworked into a new policy concept based on inclusion in statutory “Well-being Goals” in the Well-being of Future Generations Act (Wales) 2015; the Welsh

Government’s flagship legislation. This legislation has led to the cessation of the CCCW which has provided important partnership advice to the Welsh Government as an impartial, critical friend. The new Act places a statutory duty on 44 public bodies in Wales to:

- adopt the Sustainable Development Principle (that decisions need to demonstrate how they have applied long term, preventative, integrated, collaborative approaches involving key stakeholders);
- work towards seven national Well-being Goals;
- focus their work on Future Generations (as well as current);
- contribute to the work of statutory Public Service Boards (PSBs);
- take a central role in the development of a Well-being Plan based on a long term assessment of the state of communities and “place” aligned to local authority areas;
- respond to a new accountability framework including reporting and review by the Auditor General Wales for the National Assembly with advice from a Future Generations Commissioner.

Of the seven national Well-being Goals, two refer specifically to climate adaptation:

*“A Resilient Wales: A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change).”*



*A Prosperous Wales is: An innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change)*”.

This is a significant reworking of how climate change adaptation was framed in the 2000s. It remains to be seen whether this new statutory footing and policy context results in profile and action around climate adaptation planning. How will the new accountability framework and performance framework around the Act compel or persuade public bodies to take climate adaptation seriously? The accountability framework for the Act has a number of features including: the Wales Audit Office (WAO) undertaking reviews of public bodies and how they have meet goals and principles; and reviews of PSBs’ Well-being Plans by a recently appointed new Future Generations Commissioner. The Commissioner will have particular powers to ensure that PSBs have inter alia, set well-being objectives that are in accordance with the sustainable development principle, and take account of the “long-term” impacts of PSBs. While aspects of the accountability framework are still to be fully developed, it will be down to the WAO and the Commissioner to drive action on this agenda. In the interim, there is a concern for climate planning and governance more generally (mitigation and adaptation) with the handover of CCCW’s role to the Future Generations Commissioner. The Commissioner’s focus is primarily on the Public Sector, whereas CCCW had representatives from all sectors. How does society regain the cross-sector, cross-party forum and partnership working that CCCW has provided as an impartial institution since 2007? This represents an important issue for mainstreaming sustainable development; the principle that underpins the new Act.

A new national set of indicators have also been published to tie in with the Act, an early “litmus test” of how climate adaptation is communicated and monitored at a national level. The sole link to climate adaptation is a measure of the “Number of properties (homes and businesses) at medium and high risk of flooding from rivers and the sea”<sup>10</sup>. The narrow preoccupation with adaptation as “flooding”, is revealing of how the topic is being currently conceptualised by the Welsh Government. This, in turn, is likely to frame how Well-Being Assessments and Plans are framed at a local level.

A broader and more ambitious agenda for climate adaptation in Wales will also need to address:

- a stronger role for the Climate Change Commission Wales to act as part of an advocacy coalition and develop a more sympathetic environment for policy debate;

- building capacity in the public sector for officers, agencies and key actors so that they can undertake independent, well-resourced analysis and have the arenas in which to discuss their ideas;
- guidance to give substance to the Future Generations Act which needs to focus on the institutionalisation of innovation; and
- local narratives and scenarios of climate change adaptation need to be further developed to communicate to communities the changes they may experience.

### CONCLUSIONS

The Welsh Government has limited capacity for independent policy development. It has made a virtue out of partnership working, partly as a means to extend its capacity by engaging with knowledge and communities that it would not previously have accessed. As a form of governance, partnerships have important implications for the way in which policy can develop. Partnerships can knit together diverse groups (e.g. local government and public bodies) and work between different levels of government. By doing so, partnerships can rework ideas and concepts and make them real and resonant to decision makers. However, there is a caveat to partnership working for adaptation. Recent research has found that adaptation is giving way to a resilience discourse by subnational governance and policy actors in the UK, including Wales. The “resilience trap” is represented by the dangers of adopting short-term strategies as a reaction to climate impacts like flooding, rebranding existing adaptation strategies and widening partnership networks, which obfuscate subnational mobilisation around adaptation by favouring economic resilience over climate resilience<sup>11</sup>.

Consequently, we need to be sensitive to the ways in which governance arrangements like partnership working can facilitate or constrain opportunities for policy rhetoric and delivery. The limited policy content on climate change adaptation (as compared to mitigation) in Wales has meant that its operationalisation has been narrow, for example, at the local level little has gone on beyond risk assessment. Climate change adaptation has been simply outcompeted by other policy issues. Our contention is that, despite favourable conditions for climate adaptation to be applied across the policy spectrum, without specific accountability and drivers, and the right sort of partners, it may once again, be marginalised by other more short-term, urgent issues.

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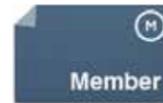


# New members and re-grades



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Simon Bingham – Development Unit Manager  
Joanne Kwan – Project Manager  
John Midgley – Principal Scientist  
Adrian Punt – Managing Director



is for those individuals who have substantial academic and work experience within environmental science.

Jenna Angliss – Graduate  
Elizabeth Beers – Associate (Team Leader - Contaminated Land)  
Oliver Belson – Principal Environmental Consultant  
Nadia Bidzinska – Environmental Advisor  
Kirk Bridgewood – Technical Director  
Sam Chapman – Chief Innovation Officer, Director & Co-Founder  
Steven Cone – Senior Hydrogeologist & Senior Groundwater Modeller  
Nicholas Daniels – Contracts Manager  
Gareth Davies – Technologist - Special Analysis  
Anthony Dixon – Environmental Consultant  
Neil Fyfe – Associate  
Nicholas Gardner – Scientist  
Emma Gibbons – Senior Air Quality Consultant  
Alec Hales – Senior Contaminated Land Consultant  
Steven Harding – Senior Environmental Consultant  
Stephen Jay – Graduate Acoustic Consultant  
Chi Chung Li – General Manager (Safety & Environmental Protection)

Mansour Malik – Environment, Health & Safety Specialist  
Patrice McVeigh – Senior Sustainability Engineer  
Kathryn Monk – Principal Advisor for Science  
Dana Montgomery – Environmental Scientist  
Denise Onwumere – Administrative Assistant (Environment)  
Damian Pawson – Acting Divisional Manager (Environment)  
Nichola Rafferty – Senior Environmental Consultant  
Jacqueline Rogers – Associate Dean, Learning, Teaching & Student Experience  
Hallan Sambrooke – Technical Assistant  
Edmond Sanganyado – Graduate  
Jo-Anne Sewlal – Lecturer in Ecology and Evolutionary Biology  
Jonathan Shaw – Principal Engineer  
Amit Singh – Humanitarian Preparedness Coordinator  
Katie Smart – Sustainability Assessor  
Piercarlo Smith – Senior Environmental Scientist  
Jacob Surman – Environmental Specialist  
Katy Tsemmelis – Manager - (Mining & Refining)  
Nigel Turner – Project Engineer (Environmental & Geotechnical)  
Anthony Vine – Technical Manager  
Simon Waite – Associate  
Alison Williams – Associate Director  
Timothy Williamson – Principal Consultant  
Lu Yang – Sustainability & Environmental Consultant



is for individuals beginning their environmental career or those working on the periphery of environmental science.

Cristiano Ascolani – Contaminated Land Consultant  
Samuel Barker – Graduate  
Matthew Bayliss – Masters Student

Jonas Beaugas – Consultant  
Thomas Benson – Contaminated Land Officer  
James Browne – Graduate Air Quality Consultant  
Julia Burnell – Graduate Air Quality Consultant  
Jennifer Chambers – Graduate Environmental Scientist  
Jake Cole – Water Treatment Graduate Sales Engineer  
Joanne Copping – Laboratory Technician II  
Andrew Davies – Graduate  
Patrick Donnelly – Senior Project Officer (ZEN)  
Iain Dunbar-Marchant – Independent Consultant  
Lauren Elvidge – Senior Environmental Scientist  
Sarah Errity – Graduate  
John Harrington – Graduate Air Quality Consultant  
Rebecca Heaton – Graduate  
Freya Herman – Funding & Relationships Officer  
Nicole Holland – Assistant Air Quality Consultant  
Sally Howse – Assistant Environmental Consultant  
Khadija Jabeen – Postgraduate Researcher (Environmental Research Group)  
Matthew Jones – Graduate  
Alex Jones – Air Quality Consultant  
Samuel Kesson – Environment & Safety Officer  
Felicity Lowther – Graduate Environmental Consultant  
Matthew McBride – Environmental Technician  
Musashi Morley – Trade Waste & Pollution Control Officer  
Mark Murphy – Environmental Assessment Graduate  
Darryl Neylon – Assistant Geo-environmental Engineer  
Katherine Petty – Graduate Environmental Consultant  
Stuart Powles – Environmental Officer  
Ronit Praver – Science & Innovation Officer  
Muhammad Rajput – Graduate Air Quality Consultant  
Craig Rattigan – Graduate  
Josh Rollason – Graduate  
Adam Romo – Graduate  
Samantha Sage – Part time Customer Assistant

James Southwood – Researcher (Freelance)  
Shannon Stone – Permitting Officer (Water Resources & Waste)  
James Thornton – Environmental Advisor  
Udeme Umoren – Chemistry Lecturer  
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# The changing face of the Northern Ireland planning system: An environmental perspective

**Joseph Martin** analyses the challenges and achievements Northern Ireland has faced in environmental planning policy and looks at what the future may hold.

The Planning system in Northern Ireland (NI) has undergone a rapid period of transition in the last few years, attributed to the reformation of the local councils and the new power of planning decision makers. In April 2015, the Strategic Planning Policy Statement (SPPS)<sup>1</sup> for NI was published which effectively, in the Department for Infrastructure's (DfI) words, reduced over 800 pages of policy down to less than 100 pages. This was a significant achievement considering the problems of planning which have curtailed development planning in NI for decades. In essence, the SPPS replaces around twenty Planning Policy Statements (PPS) into one composite policy document. This is a significant change to the number and role of previous planning policies in NI.

This article will look at some of the challenges and opportunities that the planning system in NI now faces. To look forward, one must sometimes look back and evaluate the planning system before the new "Super Councils" were introduced. This will allow a balanced perspective on planning policy in NI to be reached.

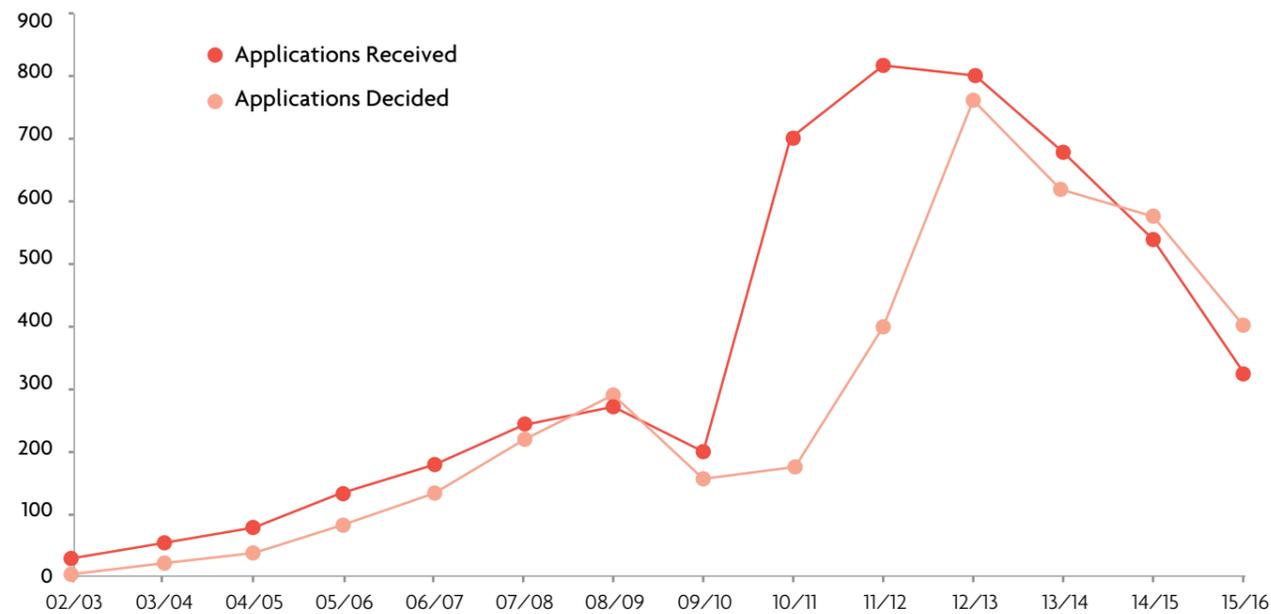
## A HISTORICAL PERSPECTIVE

The previous planning system in NI was fundamentally centralised, with forward planning and development management functions undertaken by the Planning Service, an agency of the previous Department of the Environment (DOE) (now Department of Infrastructure (DfI)), which also set out its policy in the form of PPSs. One of the many drawbacks of the old planning system was the length of time for planning applications to be decided upon.

In 2013, the Planning Reform Bill which was designed to guide the path forward for council-led planning post-2015, was effectively scrapped. Other problems persisted such as, out of date local Area Plans still being used for planning application decisions and the need for greater policy to cope with the increasing number of renewable energy applications clogging the NI planning machine from effectively functioning properly. A lack of progress on Area Plans meant policies which were devised for a previous era were being used to inform current planning decisions. Most of the Area Plans were based on regional planning



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▲ Figure 1. Renewable Energy Applications 2002/2003 – 2015/2016 in Northern Ireland. Reproduced from Department for Infrastructure and Investment <sup>2</sup>.

policy rather than specific localities which in itself was an inherent weakness. The Area Plans were also overcomplicated and voluminous with little public engagement on how they were formed. These issues were causing frustration among the wider public as well as key stakeholders within the province.

Renewable energy planning applications were also on the rise (both small and large scale). The old planning system was feeling the strain due to a significant shift in the volume, timescale and approval of all these new applications made. As can be seen in **Figure 1**, spikes of renewable energy applications made and received occurred from 2009 onwards.

In essence, the strain put on the NI Planning Department (now DfI) was immense as it had to facilitate these new increased applications as well as the normal levels of applications that were being submitted on a continual basis.

Other factors which were leading up to a much needed reform in local government planning policy were concerns around a lack of local council led involvement in planning application decisions and a lack of community led decision making within the

planning process. A change was in order and that is exactly what occurred in 2015.

**THE WAY FORWARD REALISED**

In April 2015, Planning Policy in NI changed forever when the SPPS was published, streamlining the previous system into a simpler, reliable and efficient planning model.

The move to a two tier model was realised:

- (1) The DfI still retains powers for regional planning policy, the determination of regionally significant planning applications, and oversight and guidance for councils and governance structure in NI; and
- (2) Local councils have primary responsibility for the implementation of the following key planning functions:
  - local plan-making;
  - development management; and
  - planning enforcement.

Many of the previous council areas have now been reduced from a total of 26 to 11 Super Councils. Each

of these councils will now be expected to produce their own Local Development Plan (LDP). These LDPs will take account of the Regional Development Strategy 2035 (the sustainable development strategy for NI) to help designate and conserve i.e. Conservation Areas and Areas of Outstanding Natural Beauty (AONB's). As well as this, LDPs will have to take the lead on community planning to involve statutory bodies and community groups to address issues such as local tourism and urban/rural regeneration schemes, and visions to parallel with regional policy initiatives. Perhaps the greatest challenge though will be involving local groups and key stakeholders to actively contribute their own ideas and to formulate working groups within each community.

**THE CASE FOR COMMUNITY PLANNING**

The new planning restructuring within NI has pivoted on a theme which is prevalent in other devolved administrations within the England, Scotland and Wales community planning system. The new Area Plans, which are currently being prepared in the 11 new Super Councils, will reflect the need to empower

community leaders and community groups to submit their influence on the planning process. Research in wind farm developments throughout Europe suggest that the earlier communities become involved in exerting their influence in decision making processes, the more likely a positive outcome will be reached.

This will certainly be the case for the new era of planning in NI – the community cohesiveness in making these decisions will ensure collective responsibility is taken from now on. Further down the line, if problems arise, they can easily be rectified by each council area seeking constructive and positive consultation, instead of delivering an oblique solidary decision that must be appealed through a long stagnant process. The new era of planning reform in NI will only benefit from a structured, open and collaborative approach to community planning. From an environmental perspective, local knowledge will be crucial in driving local environmental policy that will strengthen and contribute to existing environmental designations within each council area.



▲ Figure 2. Rathlin Island, part of the Antrim Coast and Glens Area of Outstanding Natural Beauty. (© PHB.cz | Fotolia)

**LOCAL ENVIRONMENTAL CONSIDERATIONS**

As the new Super Councils develop and emerge with their own ideas on planning, the need to secure and strengthen local environmental planning policy and local conservation areas becomes critical. The strategic arm of decision making was the pillar of environmental policy for NI and it will still have great influence, but now too will local councils and decision makers. There will essentially be a greater role for those in the new council areas to have a greater environmental knowledge. Communities will be able to make informed decisions based on strategic environmental policy and local knowledge that will enable the correct decisions for that local area to be made.

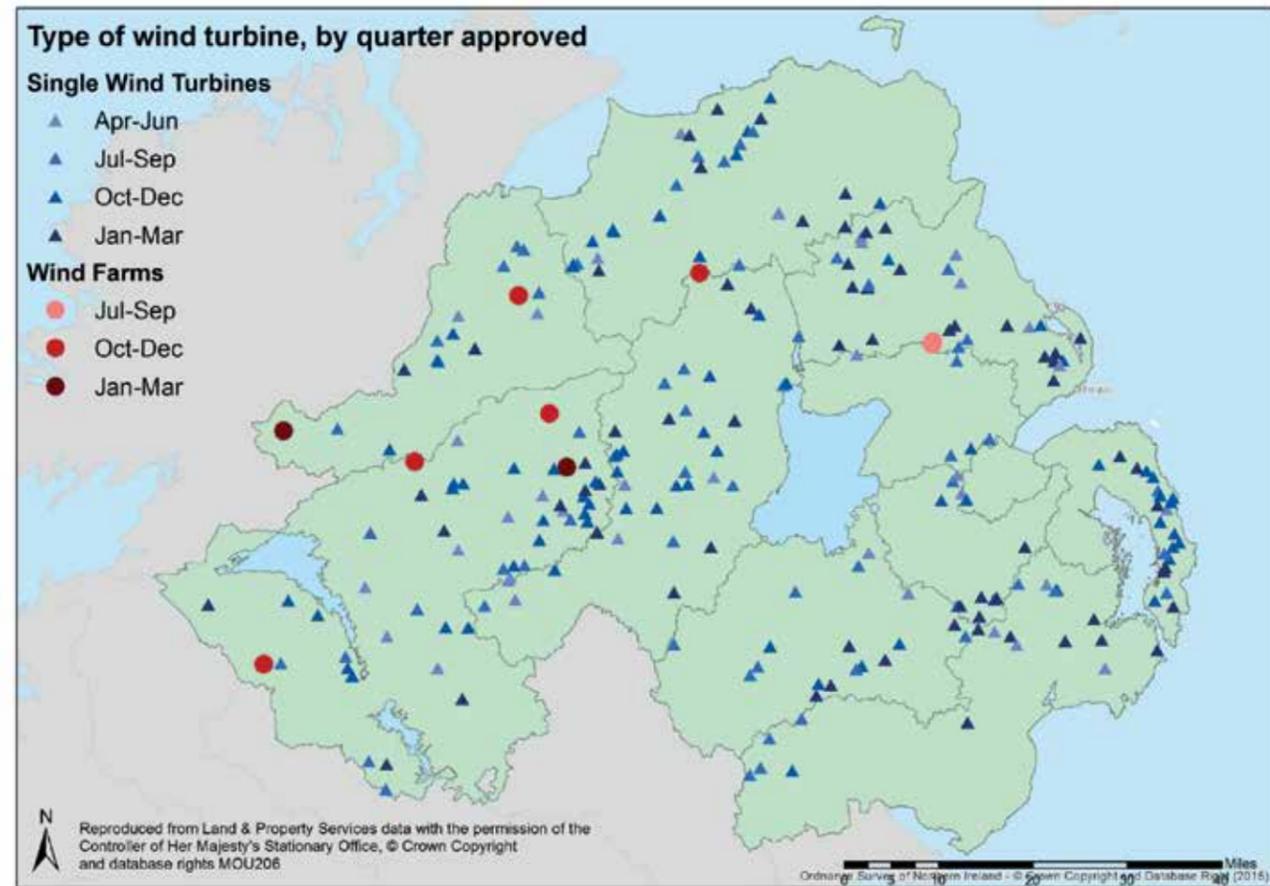
In 2015, the Northern Ireland Renewables Industry Group (NIRG) made the following statement:

*“In 2015, Northern Ireland faces a crucial phase of our journey towards sustainability. The key framework for sustainable energy in Northern Ireland, the Strategic Energy Framework, will be reviewed as it reaches its mid-way point. Our planning system will see profound changes as new Councils take responsibility for plan-making and planning decisions under a new policy framework”<sup>3</sup>.*

**WIND FARMS IN THE WEST OF NORTHERN IRELAND**

The west of NI has one of the greatest wind resources in Europe. The rural counties of Fermanagh and Tyrone have seen an unprecedented number of planning applications for wind farms in the past 5 to 10 years. In 2013, in a briefing to the Stormont Assembly Government, concerns were raised that the majority of wind farm applications were being made in the one area – the west of the province. These concerns were quickly raised by locals as the number of wind farms began to increase at a rate not seen in any other area of the UK. Local action groups were formed and negative feeling was beginning to assert itself to the previously unassailable wind energy industry within NI.

The new Super Councils have so far shown that they are prepared to take some difficult decisions with regard to meeting regional and EU renewable targets, but at the same time protecting local environmental concerns, where appropriate. A balancing act is being made which meets approval from a strategic and local perspective. In the last year, wind farm applications are being rejected more often than in previous years.



▲ **Figure 3. Approved Wind Farm Applications in Northern Ireland in 2015/2016. Source: Department for Infrastructure, 2016<sup>2</sup>**



▲ **Figure 4. A small wind turbine in Ballycastle, County Antrim, Northern Ireland. (© tina7si | Fotolia)**

Recent examples include Dooish, Glenhordial and Slatbeg Wind Farms in County Tyrone (all rejected in 2015) and Gortgall Wind Farm in County Fermanagh (rejected in 2016). It is clear in 2016 that the move to local decision making is having an effect on the renewables industry in NI. Are the perceptions on renewables in NI changing or is the revised planning system which has created a change in attitudes? As can be seen in **Figure 1**, the number of wind energy applications decided upon is now above the number of applications received within the same period of time. This is perhaps another indicator of positive change occurring within the revised planning system.

**Figure 3** shows the proportion of wind turbine (both single and wind farm) applications approved in the 2015/2016 period. It also shows that perhaps a more even proportion of wind energy applications are being approved across the province rather than solely in the west of the province, where wind energy prevails and has done since the first wind farm was erected in 1994 at Bessy Bell Mountain. Will this change in the next five years? Will strategic energy policy overpower local planning with respect to large wind farms in the future?

**NI'S FIRST MAJOR ENERGY FROM WASTE FACILITY**

In 2014, NI's first major energy from waste facility was given planning permission. The application was considered regionally significant under Article 21 and the planning decision was therefore made by the

Department. It was a significant decision, as it opened up a new sector of the economy which was previously struggling to get off the ground. It was a decision which showed that the planning system in the province was embracing change in the form of new technologies whilst also drawing on its strengths and experiences of the past.

The site, adjacent to the Bombardier wing facility within the Belfast Harbour Estate, will convert 120,000 tonnes per annum of Refuse Derived Fuel (RDF), taken from non-recyclable fractions of commercial and industrial (C&I) waste, into electricity and heat. The waste is incinerated through a gasification process which produces a synthetic gas fuel as a by-product; this is used to produce steam which in turn creates electricity<sup>4</sup>. It is anticipated that the facility will produce approximately 100,000 MW of power each year<sup>5</sup>. The majority of the power will be used by the facility with spillage onto the grid if required<sup>5</sup>. No planning objections were received for the proposed scheme and its approval was seen as a generally positive and progressive step for the waste energy industry in the province.

This was planning decision making as its most forward thinking, combining energy requirements, economic growth and diversification of the NI energy sector into a new area of growth. In total, it is projected at least 150 jobs will be created by the proposed energy from waste facility when it is fully constructed in 2017.

**THE HIGHTOWN WASTE INCINERATOR**

In September 2015, a key planning decision was made (since the introduction of the new planning powers in NI) which rejected the planning application for the Hightown Waste Incinerator at a former quarry site on the outskirts of Belfast<sup>6</sup>. The planning application had a significant number of objections and was submitted by Arc 21 (Arc 21 works on behalf of its member councils to guide, support and help them meet their legal requirements and drive forward innovative waste management programmes). The planning application was considered regionally significant and thus was decided upon by the Strategic Planning Division of the Department of Infrastructure.

The Department of Infrastructure's decision to reject the application was based upon various concerns raised by objectors which included the potential impact on the environment and the knock on effect for recycling within the area. An appeal of this decision is currently on-going as of September 2016.

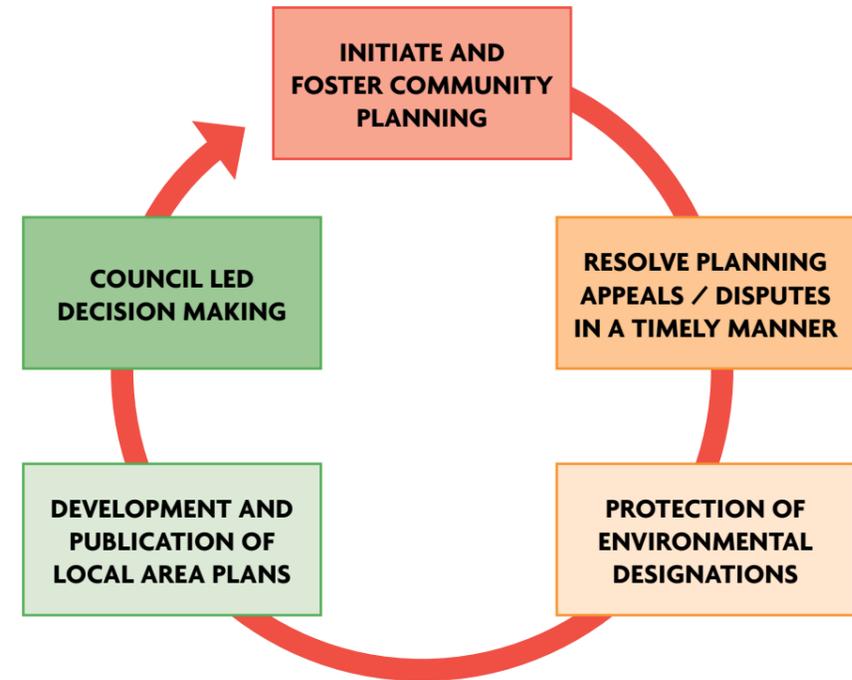
The process of this planning application is perhaps a precursor of how future planning applications in NI could be decided upon. The involvement of local opinions, community stakeholders, local politicians and community groups were key to informing the decision which was reached for this application. In the future, will planning applications, even those which are deemed 'strategic', involve more local council considerations and if so, at what level?

**PROGRESSIVE PLANNING IN COUNTY TYRONE**

The Strule Shared Education Campus in Omagh is one such example which has combined the needs and requirements of the local community in County Tyrone with that of the local educational authority and the surrounding environment. The proposed scheme will result in several schools in the local area moving to a state of the art shared campus facility with cycleways and walkways incorporated into the design. The land had previously been occupied by a now defunct army barracks and the integrated approach to planning has resulted in one of the finest examples of progressive planning in the province. This pioneering approach to education will enable a 21st century curriculum to develop in progressive, modern and flexible facilities, aspects of which will be enhanced significantly through sharing resources. The pace of the development is continuing as of October 2016, but one school (Arvalee School and Resource Centre) has already opened. As well as providing much needed educational shared space, the transformation of the former army barracks is seen as another step towards a normalised society developing in NI.

**CONCLUSION**

As the NI planning system moves forward from the reform of 2015, it faces a number of challenges that it must overcome in order to succeed. The first is to drive the production and publication of the new Area Plans as swiftly as possible. This will allow decisions on planning applications to be made by local planners in a timely manner



▲ Figure 5. What are the key drivers for a stronger NI planning system post 2016?

in order to prevent the previous backlog of applications which has happened in the past. Secondly, there is a need to clarify the role of the Department in terms of what applications are regionally significant and which applications should be dealt solely by local councils.

Furthermore, how much reliance should local councils place on community planning (Figure 5) as part of the planning process? Will there be a requirement for a joined up approach to council decision making between the 11 Super Councils to make sure that the decisions reached are consistent? Reform of the NI Planning system will no doubt improve decision making and allow clear coherent lines to be drawn, but the real judgement will come when new planning policies are published and new Area Plans are drawn up for consideration. Will a bright new future for planning policy in NI now evolve? ES

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# Multilevel environmental governance in the United States

**Erin Ryan** discusses the benefits of a dynamic multilevel governance approach by the US Government for cross- and inter-state environmental management.

The intensity of multilevel environmental governance disputes reflects inexorable pressure on all levels of government to meet the increasingly complicated challenges of regulation in an ever more interconnected world. In the United States (US), debate over the responsibilities of different levels of government are framed within our system of constitutional federalism, which divides sovereign power between the central federal administration and regional states<sup>1</sup>. Dilemmas about devolution have been erupting in all regulatory contexts, but environmental governance remains uniquely prone to federalism discord because it inevitably confronts the core question with which federalism grapples—“who gets to decide?”—in contexts where state and federal claims to power are simultaneously at their strongest.

Environmental problems tend to match the need to regulate the harmful use of specific lands (among the most sacred of local prerogatives) with the need to regulate border-crossing harms caused by these uses (among the strongest of national prerogatives). As a result, it is often impossible to solve the problem without engaging authority on both ends of the spectrum—and disputes erupt when local and national ideas on how best to proceed diverge. Ongoing jurisdictional controversies in energy policy, pollution law, and natural resource management reveal environmental law as the canary in federalism’s coal mine, showcasing the underlying reasons for jurisdictional conflict in all areas of law.

Wrestling with these incendiary tensions at the intersection of local land use and spillover harm, environmental federalism helpfully exposes the fault lines underlying the American federal system to analysis—but also the available tools for coping with them. American environmental law has developed structural means of managing these tensions which may be instructive for other devolution conflicts or claims for decentralised environmental decision-making in other jurisdictions. This article suggests a few potential lessons from the American experience.

In the US, environmental governance often contends with jurisdictional controversy through programmes of cooperative federalism, in which state and federal actors take responsibility for separate but interlocking roles within an overarching regulatory programme<sup>1</sup>. Statutes engage regulatory stakeholders across multiscalar lines, allocating responsibility according to the distinctive strengths of local and national capacity, seeking the best balance of flexibility, durability, and responsiveness for each individual context. Intergovernmental partnerships may involve direct state-federal cooperation, but they are often mediated by statutory structures that asymmetrically allocate decision-making authority within programmes of coordinated capacity, federally-supported state implementation, conditional pre-emption, and permitting programmes.



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### COORDINATED CAPACITY

These programmes partner distinct regulatory skillsets of state and federal actors to operate independently in a shared regulatory space. For example, the Emergency Planning and Community Right-to-Know Act engages state and local experts in coordinated planning for chemical and other emergencies<sup>2</sup>. It harnesses local capacity by requiring each state to establish an Emergency Response Commission drawing on technical expertise from all relevant state agencies<sup>3</sup>. It partners local expertise with federal capacity by authorising the Environmental Protection Agency (EPA) to require compliance by all relevant facilities with the emergency planning provisions created by each state's commission<sup>3</sup>. This structure drew praise as an early cooperative federalism model, enhancing interjurisdictional synergy by trading a fully federalised response for one enabling more expert state implementation<sup>4</sup>. However, it was also criticised for not allowing states to opt out of participation in favour of direct federal regulation<sup>5</sup>.

### FEDERALLY SUPPORTED STATE IMPLEMENTATION

In more complex programmes, the federal government often negotiates for local participation in multilevel governance through conditional spending, offering financial and technical resources to persuade states to help implement federal goals and to facilitate state

accomplishment of related regulatory goals<sup>6</sup>. These programmes are attractive to the federal government because they enable Congress to negotiate with states for policymaking influence in regulatory realms that lie beyond more directly constitutionally enumerated federal powers<sup>7</sup>. They are attractive to states because they come with fiscal incentives and enable state choice, enhancing the potential for jurisdictional synergy while maintaining respect for local autonomy. For example, the Coastal Zone Management Act (CZMA) enables each state to accept or reject the proposed partnership, because the law provides for no federal intervention if the state declines the federal invitation<sup>8,9</sup>. Another example is the Superfund Act, a federally administered programme that imposes liability for hazardous substances, but authorises discretionary grants to encourage state participation and leadership in clean-up efforts<sup>10</sup>.

### CONDITIONAL PREEMPTION

A classic model of cooperative federalism pioneered by environmental law is that of conditional preemption, by which the federal government sets goals or standards that may be implemented by either state or federal actors. This model invites the states to participate in accomplishing an overall regulatory goal by tailoring the implementation of federal standards in the way that best suits local political, geographic, economic, and

demographic circumstances. However, if a state declines to participate, the federal government will regulate in-state activity directly, preempting any conflicting state law. These programmes safeguard a centralised response while opening possibilities for preserving local autonomy and fostering interjurisdictional synergy.

Many environmental laws deploy federally-supported state implementation and conditional pre-emption simultaneously, inviting state participation but guaranteeing a federal fall back if a state declines the invitation. For example, the Clean Air Act—perhaps uniquely among environmental law—uses conditional spending as less of a carrot and more of a stick. The Act establishes National Ambient Air Quality Standards and anticipates that states will design and administer State Implementation Plans for attaining them. If they do not, the federal government will eventually do so using a Federal Implementation Plan. In the meanwhile, non-compliant states may suffer the loss of federal highway funds offered under a related conditional spending partnership<sup>11</sup>. The design of the Clean Air Act reflects its architects' intentions that the federal government remains the clear senior partner, reserving dominant centralised authority to resolve a collective national problem. After all, air pollution results not only from activities solidly rooted in one place, but also

from countless mobile sources (both domestically and internationally) that are less meaningfully related to local expertise and land use authority<sup>12</sup>.

### SHARED AND GENERAL PERMITTING PROGRAMMES.

Most state/federal partnerships follow a model similar to the Clean Air Act, in which federal judgment usually trumps on regulatory goals and standards, while local judgment usually gets federal deference on matters of design and implementation that account for diverse local circumstances. In fact, environmental law has pioneered different ways of formalising this asymmetrical allocation of state and federal authority through its different approaches to shared and general permitting programmes. In shared permitting programmes like those of the Clean Air and Water Acts, state and federal actors share authority for permitting private activity that implicates the overarching regulatory goal. In addition, general permitting programmes provide a streamlined means of negotiating the satisfaction of regulatory goals when governmental actors are themselves permit applicants.

General permits enable applicants to obtain permission to engage in regulated activity by following a general set of instructions that provide specific guidance about acceptable and unacceptable activity<sup>13</sup>. An under-sung

tool of cooperative federalism, they can maximise local discretion and minimise the overall regulatory burden on both ends, by facilitating locally tailored resolutions within exacting national guidelines. For example, the Army Corps of Engineers uses a general permit to protect wetlands under the Clean Water Act, allowing countless public and private actors to obtain land use permission with minimal regulatory oversight but according to a specified set of regulatory guidance<sup>13,14</sup>. The Clean Water Act also authorises municipal storm water discharges under a general permitting programme<sup>15,16,17</sup>.

#### LESSONS FROM DYNAMIC FEDERALISM

The conventional tools of cooperative federalism provide critical forums for regulatory collaboration in realms of legitimate jurisdictional overlap, where the need for strong centralised response is matched by strong local

capacity rooted in the states' pre-constitutional police power. Indeed, environmental scholars—especially among the emerging dynamic federalism literature—are increasingly emphasising the values of overlap, fluidity, exchange, and negotiation among separately regulating local, state, and federal actors (see **Box 1**).

#### BOX 1. BALANCED FEDERALISM

Innovations in federalism theory, such as the Balanced Federalism model I've set forth in previous work, advocate for dynamic interaction among the various levels of government. For example, Balanced Federalism emphasises shared interpretive responsibility among both branches and levels of government, to achieve a balance among the competing values of multilevel governance that is both dynamic and adaptive over time<sup>1</sup>.

Drawing on these insights, governance architects could capitalise on the existing asymmetrical allocation of authority to more effectively engage insight and capacity at the local level, and to more strategically allocate roles among executive, legislative, and judicial decision-makers where each is most able. Federalism theory should also push regulators to recognise that many of the difficult jurisdictional dynamics that are formally recognised within state-federal relations are equally meaningful in municipal-state relations. While the US Constitution falsely presumes that municipal interests are synonymous with that of their state, federalism controversies over fracking and other energy harvesting, especially reveals intrastate conflicts. In addition, architects designing new regulatory models must consider all implicated governance values<sup>18</sup>, weighing carefully whether any one takes priority

over another. The more all values are in equipoise, the more the regulatory framework should allow for adaptive management through ongoing deliberation among regulatory stakeholders.

A key lesson of environmental governance is that there is no one size to fit all regulatory needs, and different federalism values may take priority under different circumstances. For example, the Coastal Zone Management Act (CZMA) establishes a federal statutory framework that enables multiple iterations of open bargaining between state and federal executive actors toward corresponding state legislation, providing a good example of how to integrate state/federal and legislative/executive capacity toward uniquely tailored regulatory endpoints, where place-based local diversity is the determinative factor<sup>19</sup>. A very different model is

**“A key lesson of environmental governance is that there is no one size to fit all regulatory needs, and different federalism values may take priority under different circumstances.”**



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taken by the Clean Air Act's mechanism for regulating motor vehicle emissions, which enables states to follow either the federal or California standard, in order to limit the variability of regulation within the national market of automobile manufacturing while still enabling the benefits of regulatory competition<sup>20</sup>. This model enables effective dynamic interaction within a more centralised regime, in which the constraints of a national market are the most critical factor<sup>21</sup>.

With so many considerations at play, it is hard to imagine environmental law—or any federalism-sensitive governance—reaching a definitive answer to the question of “*who should decide?*”. Strictly segregating state and federal efforts in interjurisdictional contexts is unlikely to work well, as demonstrated by failed environmental governance in the US over non-point source water pollution<sup>22</sup>. Yet leaving jurisdictional matters fully unresolved can also have serious consequences. Doctrinal uncertainty may deter effective regulatory problem solving where it is needed, if regulators fear becoming embroiled in legal challenges to their assertion of contested authority, as occurred during American efforts to regulate radioactive waste<sup>23</sup>. Alternatively, doctrinal uncertainty can encourage self-serving regulatory abdication, if all levels of government cast the regulatory dilemma as someone else's responsibility<sup>24</sup>.

Heeding these lessons, well-crafted multiscalar governance belies the perverse presumption of “zero-sum federalism,” which assumes that the allocation of decision-making authority among levels and agents of government is always a zero-sum game<sup>25</sup>. Defying the presumption that authority exercised by one is categorically removed from others, environmental governance has experimented with different ways of enhance authority among multiple agents simultaneously, through structured programmes of consultation and exchange. This empirical assault on the mythos of zero-sum federalism warrants emphasis, drawing attention to what most American federalism actually looks like in practice, and how federalism in practice increasingly departs from the rhetoric of conventional federalism theory<sup>25,26</sup>.

### CONCLUSION

In the end, perhaps the problem that stymies all federalism-sensitive governance is the assumption underlying the question with which we began. “*Who should decide?*” presumes a simple answer, and in contexts of profound jurisdictional overlap, there is rarely a simple answer. American environmental federalism has shown that the best response is often to inform interjurisdictional governance with multiple perspectives as feasibly as possible, through ongoing processes of exchange,

adaptation, and negotiation among stakeholders at all levels of jurisdictional scale. Balanced federalism suggests that similar principles apply to the allocation of decision making authority along the horizontal separation of powers. Good interjurisdictional governance engages not only the distinctive capacity at different levels of government vertically, but from the different branches of government within each level. Legislative, executive, and judicial coordination at all levels of scale are needed to manage the difficult trade-offs that federalism-sensitive governance always has, and always will, require of us.

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# Layers of government

**Colin Reid** discusses the impact of Brexit on environmental law development within the UK.

**E**ffective measures to tackle environmental problems require action to be taken at many different scales. The fumes coming out of a chimney may contribute to global climate change, but they can also present a nuisance to neighbouring residents. It is therefore no surprise that the legal responses to environmental challenges also operate at different levels, but how these fit together can be far from simple.

With the summer's referendum focusing attention on relations between the UK and the EU, it is easy to forget that in the regulation of environmental, and other, matters, there are other layers to be considered. Firstly there are the international law obligations which provide the background to much of what is done in a more detailed way by the EU and the UK. These obligations will continue to constrain the UK's freedom of action even once withdrawal from the EU is complete. Secondly there is the distribution of power within the UK as a result of devolution. In the environmental context this means that when Brussels ceases to be responsible for key legislation, most powers will be moved not just to London, but to Edinburgh, Cardiff and Belfast.

## INTERNATIONAL LAW

The role of international law is obvious when it comes to the big climate negotiations such as those in Paris last December, but the UK is a party to important treaties on many other matters such as air pollution, marine pollution, dangerous chemicals, trade in endangered species and ensuring public access to environmental information. The extent of such treaty obligations can be overlooked since in recent decades the measures needed to give effect to them have often been introduced into UK law through EU legislation.



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These legal commitments will continue, regardless of membership of the EU. In practice, though, there are significant differences between obligations in international law and those under EU law. International obligations tend to be expressed in less detailed and less strict language, sometimes closer to aspirations than precise legal duties. International regimes usually lack the strong (if slow) measures provided by the EU structures to enforce compliance by states. Moreover, whilst the courts in the UK are bound to ensure that individuals can enjoy the rights conferred by EU law, the same does not apply for international law. Nevertheless, this extra layer of legal obligation can be significant in determining environmental policy.

### DEVOLUTION

The historic differences between the systems of courts, local government, landownership and criminal procedure (among others) have meant that there have always been differences in environmental law between the various nations of the UK. These differences are now increasing as a result of the devolution arrangements introduced at the end of last century (and in all cases significantly adjusted since then). The precise boundaries of the powers devolved to the authorities in Scotland, Wales and Northern Ireland vary, but in all cases environmental matters have been among the most significant areas that have become the responsibility of the devolved authorities. One consequence of this is that depending on the precise issue concerned, the UK Government may be responsible for the whole UK, for England alone or for England and any one or two of the other constituent nations.

The reality, of course, is that it is not possible to draw a clear line around what is an 'environmental' matter and defining the boundaries of devolved powers inevitably produced some awkward results, standing in the way of a holistic approach. For example, under the initial settlement, Scotland had responsibility for waste policy, but no power over the Landfill Tax which is one of the major levers to influence the quantity of waste produced and how it is dealt with; the additional powers given to Scotland in 2012 now authorise a distinct Scottish Landfill Tax.

There are some differences of policy between the different governments, on issues such as genetically modified organisms and nuclear power, and distinct administrative arrangements, such as the greater integration embodied in Natural Resources Wales. However, the scope for difference has been limited by the need to comply with EU law. One shared constraint on the powers of the devolved authorities is that they have no capacity to act in breach of EU law, so that all the governments are working within the same fundamental framework.



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**“The precise boundaries of the powers devolved to the authorities in Scotland, Wales and Northern Ireland vary, but in all cases environmental matters have been among the most significant areas that have become the responsibility of the devolved authorities.”**

This does not mean that the law in each nation has to be identical. Most EU environmental law takes the form of Directives, which set out the results to be achieved, but leave it to each Member State, or each constituent government within a Member State, to ensure that their law produces this result. Thus, an EU Directive requires that all government plans and programmes within certain categories are subjected to a strategic environmental assessment before being adopted, but leaves it to each state to decide how to implement this, so long as the procedure that is put in place incorporates the prescribed elements of the assessment process. This leaves room for different states, and the different parts within a state where they have the relevant powers, to implement the basic requirements in different ways.

At the simplest level within the UK, the need to fit the different legal backgrounds and the different electoral and legislative timetables mean that some differences are inevitable. But other differences do reflect more substantive divergence.

When Scotland came to implement the Strategic Environmental Assessment Directive, it was decided to apply this to all public sector plans and programmes,

not just those in the categories specified in the Directive. The implementation of the Water Framework Directive in Scotland was taken as an opportunity for a far-reaching reform of water law which in England and Wales had accompanied the legal restructuring and privatisation of the water authorities at the end of the 1980s. Nevertheless, the scope for fragmentation of the law is considerably restricted by the need to comply with EU law.

The EU source of so many initiatives has two further consequences for environmental law across the UK. Firstly, the devolution legislation expressly allows UK Ministers to make regulations to implement EU laws across the UK, even in areas of devolved responsibility. This cuts across the standard division of power and responsibility, but has provided a convenient and effective way of acting where a measure cuts across devolved and reserved matters or where uniformity is desired. Secondly, the European Communities Act 1972 gives to Ministers, in the UK government and the devolved ones (within their areas of legal competence), wide powers to make laws to give effect to EU obligations; the precise extent to which national legislation in specific areas allows Ministers to act has not needed to be tested in recent decades and if the 1972 Act is repealed, some loopholes may emerge.

#### BREXIT

Withdrawing from the EU will have a major impact on environmental law in the UK. The need to comply with EU obligations has undoubtedly made UK governments bring about environmental improvements faster and more thoroughly than they would otherwise have done, and one of the most significant effects will be the loss of the EU structures as a means to call the UK government to account if it fails to live up to its environmental commitments. What else can be said about a post-Brexit future?

As noted above, the UK will not have a totally free hand in terms of environmental policy in view of its many obligations in international law, albeit that they cannot be enforced as strictly as those within the EU. Moreover, there will have to be a new legal relationship with the EU which will continue to affect the freedom to set standards on environmental and other grounds. Any close trade links, such as those within the European Economic Area, will still require the application of most EU standards, and it is worth noting that even the looser trade agreements between the EU and other states, such as the Ukraine or Canada, include provisions seeking high levels of environmental standards, the application of the precautionary principle and a commitment not

to relax environmental laws in order to attract trade or investment.

To the extent that environmental policy is freed of EU or other external constraints, a greater volatility may be seen. The making of EU rules can be frustratingly slow, but once made, the law tends to 'stick'. The stability that this brings is welcomed by industries which can plan ahead and invest accordingly. It is also well-suited to the long-term programmes required to tackle major environmental problems such as water quality and climate change. The greater flexibility outwith the EU will enable quicker responses to changing circumstances and for the law to be better adapted to local needs, risks and conditions. On the other hand, such flexibility also brings a lack of certainty as to the future and the risk of policy being more vulnerable to short-term political currents and financial pressures.

A further consequence is that since environmental matters lie largely in the hands of the devolved authorities, the scope for greater differences within the UK will be increased. It is uncertain how far the devolved administrations will have the desire – and perhaps as importantly, the capacity – to develop their own distinctively different environmental laws on most issues, but undoubtedly there will be at least a drift, if not a stronger drive, towards greater fragmentation. This may in turn lead to exploration of mechanisms to ensure that a degree of coordination is retained, perhaps akin to some aspects of the current work of the Joint Nature Conservation Committee on wildlife issues.

#### CONCLUSION

The environmentalists' slogan “Think global; act local” applies to the law as well as to our personal lives. Tackling environmental challenges requires action at many different levels, cutting across the various political boundaries which history has constructed. At present, the picture tends to be dominated by the EU level, but its actions may in fact be determined by wider international initiatives and in turn have to be implemented by the UK, and especially the devolved, authorities. With Brexit, the comparatively stable and geographically extensive framework provided by EU law will be replaced by something which has the potential to be much more local and subject to rapid change, for good or bad reasons. The one certainty is that the future of environmental law is becoming less certain.

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