

▶ GUEST COMMENTARY

2012 NEHA/UL Sabbatical Report

Vulnerability to Potential Impacts of Climate Change: Adaptation and Risk Communication Strategies for Environmental Health Practitioners in the United Kingdom

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Abstract Climate change risk assessment, adaptation, and mitigation planning have become increasingly important to environmental health practitioners (EHPs). The NEHA/UL Sabbatical Exchange Award allowed me to investigate how EHPs in the UK are incorporating climate change planning and communication strategies into their work. Projected climate change risks in the UK include flooding, extreme heat, water shortages, severe weather, decreased air quality, and changes in vectors. Despite public perception and funding challenges, all the local government representatives with whom I met incorporated climate change risk assessment, adaptation, and mitigation planning into their work. The mandated Community Risk Register serves as a key planning document developed by each local government authority and is a meaningful way to look at potential climate change health risks. Adaptation and sustainability were common threads in my meetings. These often took the form of “going green” with transportation, energy efficiency, conserving resources, and building design because the efforts made sense monetarily as future cost savings. Communication strategies targeted a variety of audiences (EHPs, non-EHP government employees, politicians, and the general public) using a broad range of communication channels (professional training, lobbying, conferences and fairs, publications, print materials, Internet resources, social media, billboards, etc).

Introduction

In the recent past, scientific uncertainty fueled political debate about global climate change. In 1988, the United Nations Intergovernmental Panel on Climate Change (IPCC) was established to provide comprehensive assessments of scientific information related to anthropogenic climate change risk and to write policy reports re-

garding adaptation and mitigation (IPCC, 2013). Since then, climate change is widely acknowledged to be caused in large part by human activity, and the conversation has changed to be not so much *if* it is happening but *how* humans can impact it, *what* the health implications might be, and *how to mitigate and adapt* to predicted climate change scenarios.

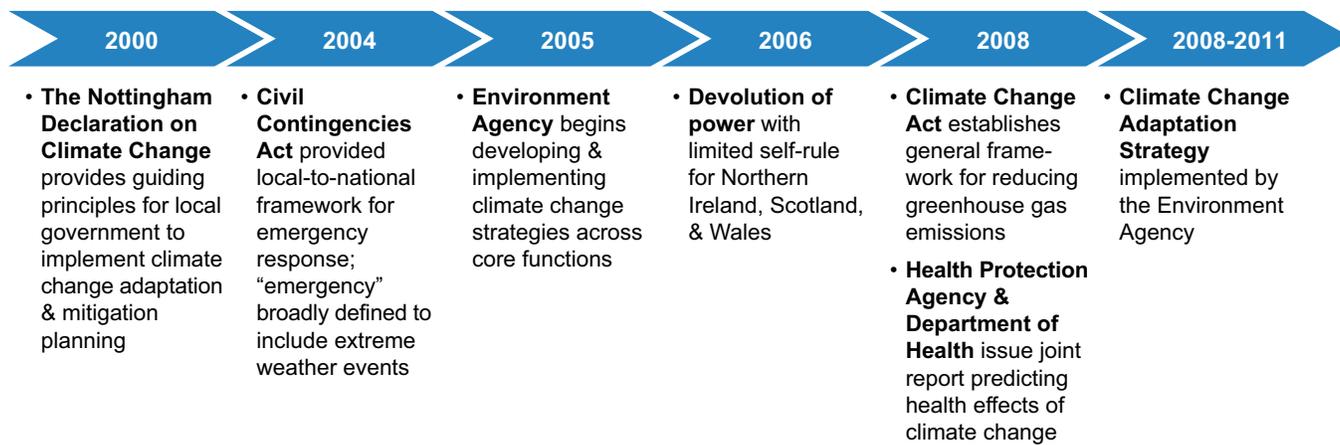
The 1992 Rio de Janeiro Earth Summit led to the creation of the United Nations Framework Convention on Climate Change (UNFCCC), establishing baseline measurements of greenhouse gas emissions (UNFCCC, 2013a). Agenda 21, or Local Agenda 21 (LA21), encouraged local, national, and international focus on sustainable development for the 21st century (United Nations Environment Programme, 2013). Following the establishment of UNFCCC, annual meetings have been held to assess progress on climate change. The 1997 Kyoto Protocol set legally binding target reductions on greenhouse gas emissions for industrialized countries, with the first commitment period effective from 2008 to 2012 (UNFCCC, 2013b). Although the U.S. did not ratify the Kyoto Protocol, the UK did (UNFCCC, 2013c).

LA21 provided a framework for local authorities in the UK to examine sustainable development. In 2000, the Nottingham City Council developed the Nottingham Declaration on Climate Change to provide guiding principles for local government to implement climate change adaptation and mitigation planning. The document addresses the need for local government to examine service delivery. Fuel efficiency, fuel poverty, and reduction of greenhouse gases were specifically highlighted as important planning factors. The Nottingham Declaration has been signed by numerous local entities in the UK (Nottingham City, 2011).

The Civil Contingencies Act provided a local-to-national framework for emergency response. “Emergency” was broadly defined

FIGURE 1

Timeline of UK Events



and can include responses to extreme weather events. The act requires that organizations share information and cooperate in emergency planning and response. It also established Local Resilience Forums, which conduct risk assessments and publish the results as a Community Risk Register (CRR), as a preliminary step for emergency planning. In addition, the act established two categories of responders. Category 1 responders (police, fire, ambulance, local authority, coast guard, port authority, National Health Service, Health Protection Agency [HPA], the Environment Agency/Scottish Environment Protection Agency) are required to have an emergency planning officer to serve as coordinator. Category 2 responders (such as utility and transportation companies) may be requested to support the actions of the category 1 responders (Elizabeth II, 2004).

Devolution of power also impacted climate change responses. In 1998 and 2006, legislation was passed to devolve limited powers to Northern Ireland, Scotland, and Wales and to create the Northern Ireland Assembly, the Scottish Parliament, and the Welsh Assembly as legislative bodies (Elizabeth II, 2008a; Wikipedia, 2013). According to David Kidney, Chartered Institute for Environmental Health (CIEH) policy director, "when they were set up, the LA21 agenda of their local governments in effect influenced the attitudes of their politicians in the devolved parliaments and assemblies. So they were quite keen on taking action. And they [were] at least up to

speed with the UK politicians, maybe in some cases ahead of the game" about going green and renewable energy programs (D. Kidney, personal communication, July 4, 2012).

The UK has taken positive steps to examine the potential impacts of climate change through adaptation and mitigation planning, which incorporate health risk and health risk communication strategies as well as energy sustainability efforts (Figure 1). Beginning in 2005, the Environment Agency in the UK has worked to develop and implement climate change adaptation strategies across its core functions and into a variety of policy settings. According to the Climate Change Adaptation Strategy (2008–2011) section 3.1, severe weather events during the past decade (heat wave, drought, and flooding) have highlighted the impact of climactic events on society. The document also highlights some of the predicted risks associated with climate change such as flooding, drought and water scarcity, changes in species habitat and distribution, water quality, and pollution incidents (section 3.3). Waste management sites were specifically identified as potentially causing increased risks to the environment and human health due to future climate change, with the focus to improve waste management practices as a means to alleviate the increased risks (section 4.3). The document further indicates that the UK Climate Impacts Programme has been involved in generating new climate change impact scenarios to examine "probabilistic" ranges of climate variables (Environment Agency, 2008).

Several key events occurred in 2008, the chief of which was passage of the Climate Change Act (Elizabeth II, 2008b). The act was a direct result of the Kyoto Protocol and had broad political support. It established a general framework for reducing greenhouse gas emissions by 80% of the 1990 baseline levels by 2050. Also in 2008, the Department of Health and the HPA jointly issued a report about the predicted health effects of climate change. The report highlighted the key challenges as heat waves, flooding, UV radiation exposure, infectious and vectorborne disease (often associated with flooding), and increased ozone concentrations (air quality) (Department of Health & Health Protection Agency, 2008). The HPA has developed collaborative relationships with other agencies to implement wide-ranging responses to climate change and advocates for additional research in this area.

Sabbatical Overview

Because the initial waves of planning and implementation were completed, I examined the progress that is being made and the challenges that have emerged. During my sabbatical month (July 2012) in the UK, I met with key decision makers and policy planners including leadership at CIEH, a Member of Parliament (MP), members of the Welsh government, government-employed environmental health practitioners (EHPs), and academics preparing EHPs. My overall impression from these series of meetings is that the UK has put

considerable time and resources into identifying and planning for potential climate change impacts and is preparing its environmental health workforce to meet these challenges. CIEH has provided a general framework for government bodies through its policy and planning documents, and practitioners have adapted the framework to meet local needs.

At CIEH, I discussed policy issues with David Kidney, head of policy. Mr. Kidney was recruited by CIEH following service as an MP representing Stafford (1997–2010), during which time he was actively involved in environmental issues, eventually becoming parliamentary under secretary of state in the Department for Energy and Climate Change. While at CIEH, I also met with CEO Graham Jukes and Chris Day. Mr. Day discussed educational standards, qualifications to become an EHP, professional continuing education, and how the public health system is transitioning.

After touring Parliament and observing a discussion in the House of Commons, I met with Jake Berry, MP representing Rossendale and Darwen (2010–present). As minister for housing and local government at the Department of Communities and Local Government, Mr. Berry discussed how national policies impact local governments and provided examples of efforts to budget for weather-related expenses.

Steve Miller was head of the Joint Local Authority Regulatory Service for 2012 and environmental health officer (EHO) for the London Borough of Newham based in Stratford. In East London, Newham historically has had a diverse, somewhat transient immigrant population. This borough has been impacted by the development of several Olympic venues. Mr. Miller was able to address issues related to the 2012 Summer Olympics, local public health issues, the difficulties of addressing climate change at the borough level within a larger metropolitan area, the importance of culturally tailoring messages, and climate change risks such as projected rising levels of the River Thames.

North of London is the borough of Welwyn Hatfield. Peter Hill is an EHO who oversees local authority sustainability efforts. Mr. Hill oversaw development of the council's climate change strategy and the corresponding yearly action plans to cut emissions. His work also entailed educational outreach about climate change initiatives for council employees and borough constituents.



Lancashire County outreach campaign.

The city of London Port Health Authority is based at the Port of Tilbury, located about 35 miles east of London on the River Thames. Food safety inspection at a port of entry is a traditional role for EHOs. Robin Catchlove and John Ambrose gave me a tour and discussed the role of the European Union in setting policy for food safety. Inspections at the time of my visit were ramped up in preparation for the Olympics and the expected influx of tourists. We also discussed potential impacts of climate change on food imports, including the potential for higher temperatures leading to increased rates of food spoilage, as well as concerns about vectors.

Mark Taylor and Eryl Prytherch at Lancashire County Council discussed risk assessment and risk communication strategies. They explained how the CRR plays an important role in identifying risks for emergency management planning. At the time of my visit, continuous heavy rains were causing flooding, so discussing response plans was timely.

On the Isle of Man I met with Martin Hall, director of the Department of Environment, Food, and Agriculture, as well as his staff Kristian Cowin and Ivan Bratty. We discussed risks and sustainability efforts. Investment in green energy (solar and wind) and green design were evident.

Dr. Tom Knowland from the Leeds City Council addressed issues of sustainable development and economic factors. Leeds is a large, densely populated area with a commer-

cial and financial center. Our discussion included housing needs and building codes, as well as risk communication/public outreach efforts with a multilingual approach.

My visit to Wales was hosted by Julie Barratt, director of CIEH Wales. She arranged for a Skype conference with Gary McFarlane, director of CIEH Northern Ireland. Mr. McFarlane is a key player with climate change policy and advocates for each devolved parliament to prioritize climate change and sustainability efforts. Ms. Barratt and her staff shared Welsh documents about climate change risk assessment, planning, and communication. I also had the opportunity to meet local and national representatives in Wales, including Steve Knowles and Gavin Macho of the Cardiff City and County Council, as well as Andy Fraser and Lucy Corfield from the Wales government and Andy Poole from the Environment Agency—Wales.

Tim Deveaux provided prospective as a private consultant in Newcastle upon Tyne. I also met with academics from several institutions: Graeme Mitchell from Liverpool John Moores University, Gai Murphy and Steven Todd at Salford University, Ann Clayson at Manchester Metropolitan University, and Alan Whitfield from the University of Derby. Discussions included environmental health research (mosquitoes) as well as the foundations for preparing EHPs. All of them understood the need to incorporate climate change impacts into the core environmental health competencies.



Water conservation billboard.

Challenges to Addressing Climate Change

Many EHPs are local government employees whose work is directly impacted by politics and funding priorities. Mr. Hill stated that a public opinion poll conducted several years ago indicated approximately a 30% interest in climate change; this lack of public interest directly impacts political will to address such issues (P. Hill, personal communication, July 6, 2012). Similarly, Mr. Miller observed, "I think local politicians are not on the climate change agenda at all [because they are focused on more pressing local issues] (S. Miller, personal communication, July 5, 2012)." Another factor is the view that local government has little impact on such a large problem so the national government should carry the burden of responsibility.

Government budgets are annual, so long-term planning for issues not currently viewed as pressing can be difficult. As Mr. Hill succinctly stated, "If you want to plan for something that's going to happen in five years' time, it's very difficult to include that in the local government budgetary process." MP Jake Berry highlighted the difficulty in budgeting for climate-related weather events at the national level. The winter of 2009–2010 had unusually large amounts of snowfall, so the following fiscal year approximately £500,000 were allocated for snow removal. That winter was mild and the snow removal budget went largely



Electrical conservation billboard.

unused. In the midst of economic difficulties, the public viewed such a budget set-aside as wasteful (J. Berry, personal communication, July 5, 2012). Among politicians a range of opinions exists, but extreme weather events tend to draw attention to the issue of climate change. In early 2012 concerns were prevalent about water shortages, followed by "the wettest June that we've ever had since records began in Great Britain. So...from having a water shortage to having floods in areas that we've never had floods before (S. Miller, personal communication, July 5, 2012)."

A notable exception to the typical yearly budget was long-term planning for infrastructure. EHPs highlighted the need to incorporate aspects of sustainability and minimizing potential threats from climate change. On the Isle of Man, for example, predicted sea level rise makes the Douglas Promenade area particularly vulnerable to coastal flooding. Proposed adaptation measures to minimize flooding risks need to be able "to adapt critical infrastructure...at minimal cost (Isle of Man, 2013.)"

The Role of EHPs in Addressing Climate Change

In the UK, the term "environmental health practitioner" refers to an individual who has matriculated from an accredited academic program and been issued a certificate of registration as an EHP. These professionals often fill local government positions as EHOs. CIEH

is a professional organization for EHPs in the UK overseeing professional accreditation, providing training materials, developing policy positions, and advocating for environmental health interests. As such, it has taken a leading role in developing climate change policy.

In November 2008, CIEH hosted a conference entitled, "An Unhealthy Climate—a Call for Action and Changing Behaviour (CIEH, 2008a)" to focus attention on the impact of climate change on public health and to encourage EHPs to be active participants in mitigating and adapting to the effects of climate change. Presenters included representatives from HPA, the Local Government Association, and the Sustainable Development Unit of the National Health Service. In addition, CIEH released a comprehensive report in 2008 specifically addressing the implications of climate change for EHPs. The report, "Climate Change and Its Health Implications (CIEH, 2008b)," highlights the need for both mitigation efforts and the need to plan for longer-term adaptation strategies. Included in the recommendations is the need for public information (risk communication) on a variety of the covered topics.

In addition to policy, CIEH created online resources for EHPs dealing with specific aspects of climate change, including general environmental health, air pollution, food safety, housing, pest control, and water (CIEH, 2013). CIEH has also created a climate change envi-

ronmental health work group, which currently has approximately 60 members. The group uses the Internet to exchange ideas and discuss the links between environmental health and climate change. These EHOs have been connecting the dots of sustainability and public health work with issues such as fuel policy and extreme weather plans. They have also been trying to use a public health approach to reconnect the dots between issues such as environmental health, housing, and sustainability.

Several EHPs noted a shift in how the profession is viewed and consequently in the role of EHPs in addressing environmental public health concerns. According to Mr. Miller, EHPs have been asserting the need for environmental regulation as national government has moved to a deregulation mode. "We're losing our public health role. We're seen to be a regulatory role. We can do both, we have been doing both, but it's who owns the issue." In addition, Mr. Miller noted a shift of responsibility for enforcement. "A lot of boroughs are [using policemen rather than EHPs]. There's more of an enforcement role, not so much of an education [role]...because there's this 'anyone can do that job' sort of culture, particularly from the current government. Regulation is being looked at as too much of a burden [under current economic circumstances]." Mr. Hill also highlighted the shift that has occurred in the public health approach. He noted that in some local authorities, housing has been separated from environmental health, resulting in a fo-

cus on structural inspections rather than a public health approach.

Communication Strategies

EHPs use a wide variety of education and outreach strategies. Examples included professional training for EHOs about climate change and how to incorporate a mindset of sustainability into a variety of settings (food, transportation, housing, etc). Outreach among other government employees in the Welwyn Garden Council was accomplished through establishing a voluntary climate change group to host events such as staff awareness fairs and a staff magazine. Lobbying efforts with politicians included educational components led by CIEH. Public awareness campaigns included public service announcements, print materials (e.g., brochures, calendars, and newsletters), electronic educational materials on government Web sites, social media, and billboards (Photo on page 30). Some billboards encouraged behavior change, such as limiting shower time to conserve water or turning off unused electronics to reduce carbon emissions (Photos on page 31). Many locations used "What if" campaigns to encourage citizens to think about how they would respond to potential threats such as flooding or severe weather. Giveaways of items such as low-energy light bulbs and government subsidies of energy efficiencies such as insulation were also employed to bring about greater awareness of climate change through a focus on sustainability and reducing emissions.

Conclusion

Despite public perception and funding challenges, all the local government representatives with whom I met incorporated climate change risk assessment, adaptation, and mitigation planning into their work. The CRR is a key planning document developed by each local government authority and is a meaningful way to look at potential climate change health risks. Adaptation and sustainability were common threads in my meetings. These often took the form of "going green" with transportation, energy efficiency, conserving resources, and building design because the efforts made sense monetarily as future cost savings. 🌱

Acknowledgements: I would like to thank NEHA/UL and CIEH for making this sabbatical exchange possible. Peter Wright was an invaluable resource coordinating the sabbatical. I would also like to thank all those with whom I met for making this exchange so productive. Your time, insights, and resources were a great help.

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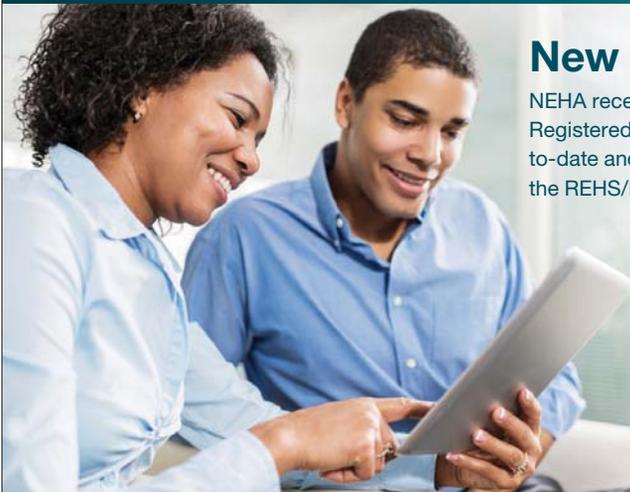
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