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Promoting sustainability and pro-environmental behaviour through local government programmes: examples from London, UK

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In recent years within the UK, behaviour change as a policy tool has gained popularity. Concurrently, the role of local authorities in both tackling unsustainability and reducing carbon emissions has become more prominent. This paper describes a recent study in the UK that aims to understand how local authorities are working to tackle unsustainability and encourage pro-environmental behaviour change in the population. Through interviews with local authority sustainability officers from London, this paper reviews the extent of sustainability work currently being undertaken by local authorities to assist residents transition to a more sustainable lifestyle. The study discusses key findings from the interviews, drawing on the commonalities and factors that influence local authority sustainability programmes. The key finding from these interviews is that there is a need for more robust monitoring and evaluation of local authority sustainability programmes. Robust evaluation would improve understanding of the potential contribution that local authority sustainability work could make towards addressing unsustainability and meeting national emission reduction targets. In addition, it would assist the development of the evidence-base on behaviour change interventions and their effectiveness.

Keywords: behaviour change; local authorities; climate change; sustainability; London; UK

Introduction

Over the past decade, the challenge of unsustainability and unsustainable consumption, and by extension climate change as one of the most important symptoms of unsustainability, has fallen increasingly on the individual as a consumer, a principal actor and a lever of change (Cohen et al. 1998; Maniates 2001; Sanne 2002; Seyfang 2005; Dobson 2010; Barr et al. 2011). This is despite arguments from social practice theory that asserts uncertainty surrounding the level of agency that individuals have towards changing unsustainable consumption behaviours or adopting pro-environmental behaviours (Maniates 2001; Sanne 2002; Shove 2004, 2010; Jackson 2005; Seyfang 2005).

Regardless, and in line with the neoliberal political economy of western society, policy responses to unsustainable consumption and climate change continue to focus on the individual as an agent for change by encouraging these 'sovereign consumers' to make more sustainable choices (Hargreaves 2011, p. 80). This has led to the notion that 'behavioural change is fast becoming the "holy grail" for sustainable development policy' (Jackson 2005, p. xi).

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Over the last decade, this focus on individuals and behaviour change has seeped into a number of areas of British policy with behaviour change ideas being been applied to a number of different policy challenges in the UK (Thaler and Sunstein 2009; Cabinet Office 2011; House of Lords 2011; Whitehead et al. 2011). Within environmental policy, behaviour change ideas have been developed extensively to encourage sustainable lifestyles. Within Britain, this is exemplified in the work of the Centre of Expertise on Influencing Behaviour at the Department for Environment, Food and Rural Affairs (DEFRA), the Cabinet Office's Behavioural Insights Team, The Department of Energy and Climate Change (DECC) Customer Insight Team and the Department for Transport (DFT) (DEFRA 2008, 2011a; DFT 2010, 2011a, 2011b; Cabinet Office 2011).

Within DEFRA, there has been the development of the 4 E's policy framework, which is a checklist of four elements that DEFRA assert should underpin interventions that intend to generate individual behaviour change (HM Government 2005; DEFRA 2008, 2011a). This framework has also been built upon by the Cabinet Office, in partnership with the Institute for Government, and informed the creation of MINDSPACE, which is a framework based on principles from behavioural economics and psychology and focuses strongly on individual decision-making (Institute for Government and Cabinet Office 2010).

DECC has also made extensive use of behavioural theories to inform understanding as to how to change individual energy consumption behaviours and has worked in partnership with the Behavioural Insights Team at the Cabinet Office to utilise and test theories based on behavioural economics (Cabinet Office, DECC, Communities and Local Government 2011; Chatterton 2011; Parliamentary Office of Science and Technology 2012). Finally, the DFT has utilised behaviour change ideas to better understand how people could be influenced to achieve policy objectives, such as shifting transport users onto lower carbon transport modes (DFT 2010, 2011a, 2011b).

Since taking power in 2010, the British Coalition Government has demonstrated strong support for the use of behaviour change theory in policy, particularly a certain type of behaviour change lever called 'nudges' (Thaler and Sunstein 2009; House of Lords 2011). The coalition pledged that it would change people's behaviour by 'finding intelligent ways to encourage, support and enable people to make better choices for themselves' (HM Government 2010, pp. 7, 8). These 'intelligent ways' were proposed in place of rules and regulation, which the Coalition sees as 'bureaucratic levers of the past' (HM Government 2010, p. 7).

Alongside this growing interest in behaviour change in policy, the British Coalition Government has also demonstrated a commitment to more local action through the introduction of the 'Big Society' agenda and its legislative framework, the Localism Act, which was enshrined in law in 2011 (Department for Communities and Local Government 2012). The Big Society is intended to improve people's lives by 'putting more power in people's hands' through a 'transfer of power from Whitehall to local communities' (The Conservative Party, n.d.). This transfer of power is facilitated by the Localism Act (Cabinet Office 2010; Lowndes and Pratchett 2011; John and Richardson 2012).

The Localism Act is intended to 'achieve a substantial and lasting shift in power away from central government and towards local people' (Department for Communities and Local Government 2011, p. 3). It also intends to pass 'power to a local level, creating space for local authorities to lead and innovate' (Department for Communities and Local Government 2011, p. 19). For sustainable development specifically, this has meant a move away from action by the central government towards local level action and initatives.

The British Coalition Government asserts that the 'Government can set a framework for SD [sustainable development] at a national level, but many changes need to happen through the Big Society at a local level' (DEFRA 2011b, p. 6). Therefore, the Big Society agenda does put the onus for action on sustainability and climate change onto individuals, local communities and local government, and away from central government (Seyfang et al. 2010).

Focus on local authorities

Given this increasing emphasis on local action, this paper will focus on the role of local authorities and extent of work they undertake to address unsustainability and climate change within the context of the UK (Gibbs et al. 1996; Gibbs and Jonas 2000). There are additional reasons for this focus. First, local authorities, as local governing bodies, are well placed to influence carbon emission reductions through 'the services they deliver, their role as social landlords, trusted community leaders and major employers, and their regulatory and strategic functions' (Committee on Climate Change 2012, p. 8). In addition, as a key player in the governance framework, local authorities can influence many key emitting sectors, including buildings, energy supply, transport, planning and waste management. Together, these sectors account for 40% of greenhouse gas emissions (Bulkeley and Betsill 2005; Committee on Climate Change 2012, p. 8). Local authorities also have the power to establish local environmental policies and regulations.

Finally, local authorities are at a 'level of governance closest to the people', and therefore 'they play a vital role in educating, mobilizing and responding to the public to promote sustainable development' (UNCED 1992, Section 28.1). Therefore, 'the nature of a local authority's relationship with the community is identified as particularly important in terms of the potential influence that it might be able to exert' (Peters et al. 2010, p. 7597). Consequently, 'local authorities and the urban areas which they govern are increasingly charged with delivering sustainable development' (Bulkeley and Betsill 2005, p. 42) and by extension, addressing climate change (Peters et al. 2013).

This importance of local authorities in addressing sustainable development was highlighted a number of years ago, when local authorities were called to action to produce 'a local Agenda 21' for their community (UNCED 1992, Section 28.2). In the UK, the central government explicitly supported the development of Local Agenda 21 (Bulkeley and Betsill 2005). Later, in 2000, the Nottingham Declaration was created to recognise 'the central role of local authorities in leading society's response to the challenge of climate change' (Energy Saving Trust 2008). This declaration was signed by a total of 300 English local authorities to demonstrate commitment to 'tackling the causes and effects of a changing climate' (Nottingham City Council 2000).

In 2012, the Nottingham Declaration was succeeded by 'Climate Local', an initiative of the Local Government Association that aims 'to drive, inspire and support council action on carbon reduction and climate resilience' (HM Government 2012; Local Government Association, n.d.). As of July 2013, 73 councils had signed up to Climate Local (Personal email communication with Local Government Association 2013).

This importance of local authorities in contributing towards tackling climate change has also been acknowledged by DECC in their memorandum of understanding with the Local Government Association, where they recognise the 'pivotal role councils have in tackling climate change' and 'that local action affects the ability of national government to meet its targets' (DECC and LG Association 2011, p. 3). This was echoed by the Committee on Climate Change (2012) who have asserted that 'there is a crucial role for

local authorities in reducing emissions to meet national carbon budgets' (Committee on Climate Change 2012, p. 8), and that in fact 'emissions reductions without local action will be insufficient' (Committee on Climate Change 2012, p. 4).

However, despite this increasing and apparent focus on local governments and the 'crucial role' that they will be required to play in 'reducing emissions to meet national carbon budgets' (Committee on Climate Change 2012, p. 8), it is all too often the case that in practice 'climate change remains a marginal issue' within local government (Bulkeley 2010, p. 235) and that a 'stubborn gap between the rhetoric and reality of local climate policy' continues to exist (Betsill and Bulkeley 2007, p. 448). There are a number of potential reasons for this gap.

First, a lack of commitment from elected members within the local authority can lead to a lack of action, as can a lack of funding (Allman et al. 2004; Peters et al. 2012). Engaging citizens on climate change and sustainability issues is also often thwarted with challenges and there are a number of well-documented barriers to engagement. Many local authorities find it difficult to engage with residents and encourage attitude and behavioural change because of citizen apathy towards the subject, and they can also find it hard to penetrate certain target sectors of society as a result of residents' modern hectic lifestyles (Fudge and Peters 2009; Peters et al. 2012). Other residents are difficult to engage because they lack trust in the local authority or confidence in their policies, and this acts as a barrier to the forging of meaningful relationships with residents and community groups and effective sustainability programmes (Fudge and Peters 2009; Peters et al. 2012, 2013).

Another factor that may influence the extent of local authority action is the lack of statutory framework to incentivise local authorities to act on Climate Change. However, in Britain, this has not always been the case. Between the years 2008 and 2009, the Labour Government introduced a number of mandatory indicators for local authorities that related specifically to climate change and adaption (HM Government 2008). Evaluation of these indicators found that although these indicators had 'weaknesses as a measure of performance' they did prompt 'concerted action for the first time' (The Audit Commission 2009, p. 19). Despite this, these indicators were abolished in 2010 and there is now no statutory framework in place for local emission reduction (HM Government 2010, Friends of the Earth 2011; Committee on Climate Change 2012).

Given the lack of statutory framework to support action on climate change by English local authorities, this paper endeavours to ascertain the extent of sustainability work that is being voluntarily undertaken by English local authorities to address unsustainability and climate change. Specifically, it investigates how local authorities are working to engage with residents through local authority-led sustainability programmes and encouraging residents to adopt pro-environmental behaviours and transition to more sustainable lifestyles.

Methodology

This paper aims to draw together evidence, collected through semi-structured interviews, on the extent of sustainability work being undertaken by English local authorities. To limit the scope and make this undertaking more realistic, in light of the limited research done so far on this topic, the research was undertaken with a specific focus on local authorities in London, the capital city of the UK.

London is one of the largest cities in Europe, having grown by 14% in the last decade (2001–2011) to reach 8.2 million, and is not without its environmental challenges (Greater London Authority 2013). Firstly, London lags behind the national average in terms of recycling waste (Greater London Authority 2011a, 2012b). It has PM10 and NO_2 air

pollution levels that exceed national air quality standards, and the limits for NO_2 are not expected to reach EU compliance (under the EU air quality directive) before 2025 (Greater London Authority 2010; House of Commons Environmental Audit Committee 2011).

The city is also at risk from energy insecurity, notably electricity. London uses 13% of the nation's electricity usage but only generates about 2% of the nation's capacity (London Assembly Environment Committee 2011). London also suffers water stress with current consumption at unsustainable rates; Londoners use 14% more water than the national average (Greater London Authority 2011b). At the same time, London is at risk from surface water flooding, largely as a result of the vast impermeable surfaces in the city (Greater London Authority 2011b, 2012b).

In terms of administration, city-wide administration of London is controlled by the Greater London Authority (GLA) Assembly and the Mayor of London, who is responsible for many of London's environmental policies and strategies. Local administration is coordinated by London's 32 boroughs and each borough is managed by a local council, also known as a local authority. The City of London represents the 33rd borough of the capital but is operated separately through the City Corporation (City of London Corporation 2013).

Each council is responsible for the administration of their borough and for delivering public services with the authority for services including highways, transport planning (but not passenger transport), housing, environmental health, waste collection and disposal and local and strategic planning, sitting with these local authorities (Committee on Climate Change 2012, p. 14). London boroughs are categorised into two types, with 12 boroughs categorised as inner boroughs and 20 as outer boroughs. This research will focus on inner London local authorities in particular.

Data collection and analysis

Data on local authority sustainability work were collected through face-to-face interviews with eight inner London local authority sustainability officers with responsibility for delivering council sustainability programmes. Nine of the total 12 inner London authorities were invited to interview. In selecting these nine boroughs, Westminster was omitted due to its high level of commercial activity; it has nearly double the number of active businesses than any other borough and therefore represents a rather unusual case (Greater London Authority 2012a). Two further boroughs were omitted due their peripheral location and that they had the largest areas and lowest population densities. Of the nine boroughs invited to interview, eight agreed. One borough opted not to participate in this research. Interviews were conducted between 2011 and 2012, over a 7-month period.

Sampling of the sustainability officers was not possible because in almost all cases, each local authority had only one or two people working in the field of sustainability, with the sufficient knowledge to be interviewed. All of the local authorities interviewed had demonstrated a commitment to climate change by signing the Nottingham Declaration, and to ensure the confidentiality of interviewees and their employers, all councils will be referred to by an identifier: A, B, C, D, E, F, G and H. A summary of the local authorities is detailed in Table 1. Interview questions were designed to encourage discussion around the different sustainability projects being delivered in each borough and elicit insights into the factors that contribute to effective and successful sustainability projects, based on the interviewee's professional opinion. In addition, the interviews intended to provide insight into the relationships that exist between local authorities and residents, and how they

Table 1. Summary of local authorities interviewed.

				Environmental indicators				
Local Authority ID[a]	Census households, 2011 (number)	Area (hectares)	Population density, 2011 (per hectare)	Area that is green space, 2005 (%)	Total carbon emissions, 2011 (ktCO2)	Household waste recycling rate, 2011/2012 (%)	Cars per household, 2011 (number)	Adults who cycle at least once per month, 2010/2011 (%)
A	80,000	1500	100	20	1000	30	0.5	20
B	90,000	1500	125	15	1250	35	0.5	15
C	80,000	1000	100	25	1500	35	0.5	20
D	130,000	2500	125	15	1250	30	0.5	25
E	120,000	3500	125	25	750	25	0.5	20
F	120,000	3000	150	10	1000	30	0.5	25
G	100,000	2000	100	25	1500	25	0.5	20
H	130,000	3500	100	25	1250	30	0.5	20

[a] Throughout this paper, the council identifier will be used to label quotations drawn on from the interviews. To ensure the confidentiality of those interviewed, all values have been rounded. Raw data available at gla.gov.uk.

interact to encourage of pro-environmental behaviour. Interviewees were asked to discuss all of the sustainability projects that they had worked on, regardless of the outcome of the project. All interviews were undertaken within the place of employment of the interviewee and lasted an average of one hour.

All interviews were transcribed verbatim. In total, 57 sustainability projects were identified in the transcripts. Of these, 31 projects were selected for analysis because they fitted two key criteria: that the council was the primary provider of the project and the project interacted directly with the borough population. Projects that focused on reducing emissions from local businesses or the local authority's estate were excluded, as were projects that were primarily led by other organisations such as local community groups.

The biggest challenge encountered during the analysis of interview data was in the measurement and comparison of the performance of the different sustainability projects. This was because there was a lack of available, relevant and rigorous information that could be used to evaluate the different sustainability projects and compare their environmental impact. This acted as a barrier to robust evaluation by the local authorities, and also within this research.

As a result, evaluation of projects had to be based on evidence supplied by the sustainability officers. This evidence was garnered from interviews and based on the professional knowledge of each officer, and where possible secondary evidence. However, this approach obviously has its issues because the outcomes of a project are evaluated from the viewpoint of a single officer. As a result, in an effort to collect more comparable data on each project, evaluation sheets were created for the 31 projects selected for analysis. These sheets included information such as a project description, project inputs and project objectives. These sheets were verified by the sustainability officers.

Findings

This section presents the findings uncovered from analysis of the transcripts using coding and inductive logic, and it will also discuss these findings in four parts. The first part will give insight into how the different sustainability departments work. The second part will focus on the types and range of sustainability projects. The third part will focus on observations and commonalities from the interviews. Finally, the fourth section will focus on the main finding from the interviews, that there is a lack of monitoring and evaluation of sustainability projects.

Approaches to sustainability work

It was found that the working approach of the local authority sustainability departments interviewed varied in both the focus of work and in their organisation. Four of the authorities focused their efforts on carbon reduction work. Authorities A and G focused solely on carbon management and energy efficiency work, whereas authorities B and F had a slightly wider working remit and also delivered a broader range of sustainability projects.

Various reasons were given to explain this focus on carbon management and energy efficiency. One common reason was that with energy-focused projects, officers 'can demonstrate the savings or the cost-avoidance' (Local Authority F). Therefore, this demonstrates a financial case for the work, as well an as environmental case. As a result, energy and carbon reduction work was deemed 'recession-proof' by one officer (Local Authority F). This was pertinent at the time of the interviews, for Britain was in recession. It was also observed that an increasing political focus on fuel poverty drove this focus on

energy efficiency work in councils (Local Authority G, Peters et al. 2012). This was best exemplified in an interview with Local Authority F, where it was observed that

> Before the last election, we had sustainability as a big priority, green issues were quite high up there on the [political] agenda. But it's different times . . . our new corporate priority is very much around poverty, worklessness and housing and those kind of issues, so there's a really strong link there for energy and fuel poverty (Local Authority F).

However, it was noted by officers that focusing on fuel poor residents is not necessarily the most effective way to reduce carbon emissions.

The remaining four local authorities interviewed focused their work on the broader spectrum of sustainability (of which carbon reduction was an element) and provided an overarching strategic lead within the council. Two of these four, authorities C and D, delivered their own sustainability projects and engagement work. The remaining two (E and H) also undertook their own engagement work but collaborated with other departments within the council to deliver sustainability projects. This was due the limited number of employees within these two sustainability departments. The staffing allocated to the sustainability teams of these eight authorities varied, with some employing a single person to oversee their sustainability work, whereas others employed numerous staff.

One factor that contributed to this variance in working approach was the political control of the council. This was demonstrated by observations that a change in political control at two councils generated changes in the councils working approach and commitment to environmental action and climate change (Local Authorities F and G). Another factor observed to influence sustainability work was the recession. All officers discussed the negative impact of the recession on the resources allocated to their department. Some departments had experienced redundancies, whilst others were anticipating redundancies (Local Authorities D and F). Many departments had little or no budget to support their projects. One officer observed that 'funding is a problem, funding's a problem for everything in local government generally at the moment' (Local Authority H). The most commonly stated reason for these limited resources was that sustainability work was not a priority for councils in a time of shrinking budgets.

Range of projects

The projects delivered varied between councils; however, there was overlap and all local authorities interviewed, bar one, worked directly with the borough population. This one council did not deliver any projects that interacted with residents and their work focused only on reducing council-associated emissions.

Of all 31 projects selected for analysis, two types of project were most common, accounting for just over half of all projects in equal measure. The first type was outreach projects that aimed to educate the population and encourage understanding. Outreach projects included events held in the public arena, with the aim of reaching out to the wider community, and events that interested citizens could elect to attend, such as film nights. Outreach work was also undertaken through door-knocking and school education programmes. These projects therefore used the provision of information to lever behaviour change.

The second type of project focused on reducing energy use in the home, and this was achieved through the provision of energy advice helplines and 'energy doctor' home visits. Such a home service involves an advisor providing tailored behaviour change advice to residents, for example on using their heating controls. The advisor may also provide and install simple energy saving measures such as radiator panels, in-home energy

consumption display units and tap aerators. They may also provide advice on potential structural and significant energy saving measures such as building insulation. These projects use fiscal and non-fiscal incentives, salience, enablement through changes to both the social and physical infrastructure and the provision of information to lever behaviour change.

Energy use and emission reduction was also encouraged through what will be termed here 'action-oriented' projects, which engaged residents on energy consumption. There were examples of such projects in at least four boroughs. Action-oriented projects required residents to take on the task of reducing their energy consumption whilst being supported by the local authority through face-to-face engagement. Such projects were normally delivered within existing community groups and residents were encouraged to monitor their own progress. Action-oriented projects used a number of levers to encourage behaviour change, including fiscal and non-fiscal incentives, social norms, salience, enablement through changes to both the social and physical infrastructure and the provision of information.

The next most prevalent type of project aimed to encourage local food growing through the provision of food growing spaces. This was promoted through the Capital Growth scheme, a partnership initiative between London Food Link, the Mayor of London Boris Johnson and the Big Lottery's Local Food Fund. The programme aimed to create 2012 local food growing sites in London by the end of 2012, and provided funding to support this aim (Capital Growth 2012). The key behaviour change lever in these projects was therefore enablement through the provision of the allotments. The allotments were also a non-fiscal incentive for residents.

The next most common types of project offered by councils included resident funding schemes and 'zone' projects. Through the provision of fiscal incentives, funding schemes worked to financially support and empower residents to deliver their own environmentally themed community projects. Zone projects are best described as projects that engage and encourage residents from a specified geographical area to reduce their environmental impact. Activities within a zone are wide ranging and can include, for example, the improvement of recycling facilities, the development of a food growing site or the piloting of a new insulation method. The zones are a holistic approach to stimulating pro-environmental behaviour change and tend to be delivered in collaboration between the local community and the local authority. As a result, they make use of a number of behaviour change levers including non-fiscal incentives, enablement through changes to both the social and physical infrastructure and the provision of information.

The remaining types of project in the sample include green champion programmes. Such programmes aimed to support residents and build capacity in the community by encouraging residents to deliver their own environmental initiatives. These programmes make use of social norms and salience to lever behaviour change, and aim to enable pro-environmental behaviour by fostering the social environment. Finally, the remaining programmes analysed aimed to reduce congestion, air pollution and waste going to landfill.

Analysis of commonalities and key findings

Qualitative analysis of the interview transcripts and evaluation sheets, of the 31 projects, demonstrated that there was limited variance in observed project effectiveness and performance. However, two types of projects demonstrated weaker performance than others. Weak performance was observed in outreach projects and knowledge campaign

projects. This outcome was somewhat expected given that it is generally accepted that the provision of information does not necessarily lead to environmental concern or pro-environmental behaviour (Burgess et al. 1998; Kollmuss and Agyeman 2002; Peattie 2010). Poor performance was also observed in three of four action-oriented projects. An explanation for this observation, and the reoccurring reasons that officers gave to explain variances in project outcomes will be discussed in more detail in this section.

Action-oriented projects

In the case of the poorly performing action-oriented projects, three of the four projects were described by officers as 'unsuccessful' or 'very unsuccessful' overall and all were described as ineffective at changing behaviour (Local Authorities B, E and F). One officer stated 'it's all very well saying we've got an [action-oriented project] but what they actually deliver is not necessarily getting the behavioural change' (Local Authority F). One explanation for this poor project performance included low penetration rates and the inability of the programme to engage existing community networks (Local Authority E). Another reason given for lack of success in two of the projects was that the built-in project monitoring mechanism was intrusive, and residents were asked to share too much information too frequently (Local Authorities B and E). It was observed that there is difficult balance in collecting detailed monitoring information through residents, whilst at the same time trying to change people's behaviour (Local Authority E). Another officer echoed this, confirming that action-oriented projects are 'difficult to measure and monitor and justify' (Local Authority F).

However, there was one well-performing action-oriented project which did not fit this trend. The officer interviewed gave a number of potential reasons for this outcome (Local Authority G). First, the funding for this project was attached to a community group and as a result, the aims of the project were developed in collaboration between the local authority and the residents, rather than just by the local authority. However, due to unrealistic timescales attached to the funding, the council actually led the project. This diminished the role of the residents and the officer observed that it caused the resident's community group to feel as if the council had taken over the project (Local Authority G), but conversely, the council felt that this shift meant that the project utilised the capacity and experience of local authority officers, which in turn contributed to more successful project outcome.

Political and corporate support

Half of the authorities interviewed stressed that political support and commitment from the upper echelons of the council are critical to a positive project outcome. This finding echoes those from previous studies (Allman et al. 2004). One officer typified this remarking that 'politics is massive, seniority of support is massive' (Local Authority F). Political party was observed to have an impact on sustainability work with the same local authority mentioning that 'the single biggest impact on behaviour change projects or sustainability projects in the borough was because of a change in party' (Local Authority F). This change in party led to a reduction in the size of the sustainability team and the breadth of their remit. Of course, the financial crisis would have also contributed to this decision.

However, the relationship between the political control of the council and the extent and type of sustainability work undertaken by each council was not necessarily correlated. Instead, in terms of generating project outcomes, it was observed that political support for action on sustainability and climate change was more important than the political party in power. One interviewee observed that 'if you have someone up there [in the upper

echelons of the council] who doesn't believe, who is a climate sceptic then nothing will go ahead, it's like a barrier, a wall, that's it' (Local Authority A). Another officer mentioned that when pitching potential projects to councillors, they 'basically talk in economic terms. I rarely mention climate change because that's a bit of a red rag to a bull for some of the members' (Local Authority H).

Finally, one council spoke about the negative impact that a lack of political commitment to sustainability within their council had on their work. They noted that 'the council wants to be seen to be doing something but doesn't really want to have to worry about sustainability too much' (Local Authority E). This lack of support for sustainability work meant that achieving results within the authority was difficult because sustainability was not a high priority amongst senior management. This acted as a barrier to the successful execution and delivery of projects by officers (Local Authority E).

It was also observed that along with securing the support of more senior members of staff and having support from the political party in control, it was also important to follow council procedure. One officer observed this, reflecting that 'I think the projects that haven't been successful, they haven't got the proper buy in and you haven't gone through the correct channels' (Local Authority D). However, once support from councillors and senior officers is garnered, it was clear that this can prove very effective and can even protect a project against funding cuts (Local Authorities A, D and F).

Financial matters

The majority of sustainability projects that focused intensively on reducing carbon emissions in the borough were projects that reduced emissions arising from the council's own estate. These projects generally focused on reducing emissions from council buildings (such as council employees' offices) and council housing. Projects that focused on reducing emissions from council buildings were excluded from analysis because they did not meet the analysis criteria and interact with the borough population. Projects that sought to reduce emissions and improve the efficiency of the council's housing stock were included because this work interacted with tenants.

Interestingly, despite such projects being focused on reducing carbon emissions, it was noted that such major infrastructural projects are not approved based on their carbon impact, instead almost all such projects are approved because they can demonstrate financial savings for the council or its tenants. One officer described how for such projects they had to 'create these horrendous business cases with minute detail' (Local Authority D). Another observed that 'anything that has a financial implication essentially has to be approved by the director of finance' (Local Authority E). Another officer reiterated this, commenting that 'it all has to go through financial case . . . .I had to basically say, this will make us X over this many years. They weren't that interested in the other arguments' (Local Authority H). As a result, projects that could deliver carbon savings but fail to represent a cost-benefit generally do not obtain approval for delivery. However, when such projects do go ahead, officers observed that they do deliver significant carbon savings (Local Authority E).

Beyond the business cases required for carbon projects, officers also shared their general opinions about funding. These opinions corresponded with those aired in similar recent studies (Allman et al. 2004; Peters et al. 2012). Officers spoke about a lack of funding, with one officer mentioning that their department has 'never had a budget so I've had to get external funding, create business cases that take sort of two months' (Local Authority D). Other officers reiterated this (Local Authority H). However, if should be noted that not all councils expressed feeling of being under-funded.

Issues pertaining to the nature of funding were also voiced. One officer felt that there was an issue with funding in general, and explained that 'I just think that the way the whole sector is funded just doesn't work, it's just one off projects that are two years and then go away' (Local Authority F). This officer felt that projects lack a long-term perspective and that 'proper political support and long term funding' would be necessary if behaviour change work was ever going to be successful (Local Authority F). Another officer also raised concerns pertaining to the nature of funding and how it has changed as a consequence of the localism bill and the 'big society' agenda (Local Authority H). More funding is now awarded through resident groups, rather than through the local authority, and one officer raised concerns about this, explaining that 'the way the funding has been distributed is a little unrealistic', given the capacity of the community (Local Authority G).

Engaging residents and working with the community

Many officers spoke of the challenge of engaging with residents in their work and there was apparent disparity in the ability of the authorities to engage with residents and work in collaboration with resident groups. Some authorities felt they engaged with residents very successfully, whilst others found engagement more challenging. One officer admitted that engaging residents is 'something we struggle with actually' (Local Authority G), whereas other authorities felt that they were 'very good at knowing when to get involved [with their community] and when not' (Local Authority C), and this led to a good working relationship with the community. One officer felt that their collaborative sustainability projects were 'successful because of the officers involved and the residents trust the officers' (Local Authority D). This local authority was therefore successful in breaking down the commonly observed barrier of a lack of trust and managed to effectively develop meaningful relationships with citizens and community groups (Fudge and Peters 2009; Peters et al. 2012, 2013).

Conversely, another authority felt differently on this matter and commented that they did not always find it easy to engage residents because they found that there is a sub-set of the community who will not engage with the local authority 'because it is a local authority and some people just don't want to engage with local authority, don't trust them' (Local Authority B). Officers also spoke of the difficulties of engaging particular sectors of the community, notably working professionals, who are busy and or apathetic towards the topic (Local Authorities C and D). This corresponded with similar observations from a number of other recent studies (Fudge and Peters 2009; Peters et al. 2012).

Despite this, the majority of officers acknowledged that engagement with the community can lead to very successful and effective sustainability projects. In addition, all officers were positive about working in partnership with the community on sustainability projects, with one officer sharing that they felt that 'the majority of people who are interested in environmental issues are open minded and even enthusiastic about the idea of working with the council' (Local Authority E). Another officer, whose local authority works successfully in partnership with many community groups, expressed that their department 'wouldn't be anywhere without [the] community' (Local Authority D) and that they were 'really lucky with our green communities' (Local Authority D).

Monitoring and evaluation of sustainability projects

Finally, the difficulties of evaluating projects were spoken of. One of the most significant findings of the interviews was the distinct lack of reliable, robust and comparable

information available on the performance of the sustainability projects. Officers were aware of this and spoke more about this in the interviews.

Officers spoke about the difficulties they faced in assessing projects, with one officer reflecting 'I think it's really hard to actually assess how well the [engagement programmes] work' (Local Authority H). Another officer also observed this and described the challenge they faced in quantifying the engagement work they delivered, such as workshops, into comparable measures such as carbon. One officer deliberated that 'I think there are ways and means to measure it [the carbon impact], what I don't think councils tend to do, is measure their kind of, the impact of the work' (Local Authority C).

This inability to quantify the impact of the projects was also observed to impact on the project lifetime and its funding. With one officer sharing the belief that food growing projects had become less of a priority within their council because they 'can't be proven to have a carbon impact. We can't turn around and say that because we started a food growing site it's likely to have saved this much carbon' (Local Authority C), another officer also mentioned the barriers they faced in quantifying the impact of projects, noting that it is 'really, really difficult even to measure the impact that we're having just because the data wasn't there' (Local Authority E).

However, one local authority did undertake work to measure the impact of their sustainability projects and behaviour change programmes and noted in their interview that 'it became very apparent that if we were going to do effective behaviour change then we had to spend almost as much time on monitoring and evaluation as we did on the actual project' (Local Authority F). This council did begin to develop some policy-relevant results, finding that 'practical sessions made the biggest difference' (Local Authority F), in terms of encouraging pro-environmental behaviour change. They also concluded that events that aim to engage the public on sustainability issues were important for bringing residents together, but they were not necessarily something the sustainability department should be funding because they did not make a difference to the borough's sustainability (Local Authority F). Unfortunately, given the recession in Britain and the financial economic climate at this time, this behaviour change work has since ceased in this local authority.

However, beyond this single local authority, these interviews found that there is a clear lack of monitoring and evaluation of sustainability projects within local authorities. Monitoring and evaluation is rarely built into the project design and where it is, there is often an over-reliance on residents for data collection (as in the case of the action-oriented energy projects), which leads to poor quality or even unusable data for evaluative purposes.

This study concludes that a lack of monitoring and evaluation acts as a barrier to the development of more effective sustainability programmes because the straight-forward question of 'what works?' simply cannot be answered with certainty. As a result, the effectiveness of different policy levers at encouraging behaviour change cannot be assessed. Additionally, a lack of monitoring of the environmental impact of projects means that the potential contribution that such projects could make towards reducing emissions and meeting national targets legislated under the Climate Change Act (DECC 2008) is largely unknown.

One potential reason for this lack of monitoring is a lack of capacity within the local authority. This reason was also proffered in the House of Lords Inquiry into behaviour change, where it was noted that expert witnesses 'questioned whether there were the requisite levels of skill in designing and evaluating interventions at a local level' (House of Lords 2011). It seems that this view is supported by these interviews.

Recommendations

Despite the lack of available data with which to robustly evaluate these discussed sustainability projects, the evidence collected through these interviews offers lessons that could improve the effectiveness of local authority sustainability projects. These are discussed in the text that follows.

Working with localism

The recent shift towards localism has led to a shift in how funding is allocated for local level sustainability work, with funding being allocated more freely to communities. However, volunteer community groups can lack capacity to deliver projects as effectively as local authority staff. Therefore, it would be beneficial to ensure that communities are supported in their endeavours by trained officers. This has already started to happen in some local authorities who observe that it has had a positive impact on project outcomes (Local Authority G). This could be facilitated through the funding mechanism and a requirement for collaborative projects between communities and local authorities.

Commitment and support

Political support and support from the upper echelons of the local authority is essential for effective sustainability projects. However, commitment to addressing unsustainability and climate change amongst local authorities is varied. This variance may be amplified by a lack of statutory framework to incentivise action on unsustainability and climate change. As a result, commitment and action are voluntary. Action from the central government could counter this, to incentivise better performance, for example, through the reintroduction of mandatory reporting on borough level carbon emissions.

Monitoring and quantifying the environmental impact

Projects that are intrusive and ask residents to undertake extensive self-monitoring are likely to cause residents to disengage. In addition, data collected from residents may be of questionable quality. Residents should only be asked to collect limited amounts of data. Ideally, monitoring should be built into the project design so that it can support pre- and post-intervention monitoring, and where possible, it should make use of objective measures and controls.

The majority of local authority sustainability work is currently being delivered on a shoe-string budget and although this is admirable, the environmental impact of this work remains largely unknown. Previous research has identified the importance of the need to focus on environmentally significant behaviour that is defined by impact (Stern 2000; Steg and Vlek 2009). However, these interviews demonstrate that this is not happening in practice. Therefore, this study recommends that the impact of projects be quantified into carbon emissions abated.

To illustrate how such monitoring and quantification of the environmental impact could happen in practice, a few examples are given here. First, programme interventions that intend to encourage recycling, for example knowledge campaigns, may be evaluated by monitoring the volume of waste recycled. Increases in volume recycled post-intervention can then be converted into carbon abated. Second, programmes that intend to encourage reductions in energy consumption, for example, through home energy visits, could be evaluated using data collected on both metered energy consumption but also on

resident behaviour, through self-reporting. Together, these two data-sets would make it possible to estimate energy (and carbon) savings and would also support the estimation of carbon reductions as a result of behavioural change (rather than hard measures).

Third, programme interventions that intend to encourage cycling, for example, the provision of new cycle parking or a new cycle lane, could be evaluated by monitoring cycle flow rates. In addition, GPS could be used to monitor cycle mileage of individual cyclists. The carbon impact of any modal shift could then be estimated. However, in all these examples, it is important that monitoring be undertaken before and after the intervention, and where possible control groups should be used. Evaluation using such methods would ensure that data collected is more robust, reliable and suitable for evaluation. However, it is worth noting that evaluating sustainability programmes is not always straightforward. For example, estimating the carbon impact of food growing programmes is particularly difficult (Edwards-Jones et al. 2008).

It could be argued that carbon may not be the most appropriate proxy for quantifying the environmental impact of such projects, for it does not support a holistic view of sustainability. However, this paper continues to support carbon as the most appropriate measure available for quantifying the impact of projects within the British context (HM Government 2011). In general, climate change is a more 'manageable policy concept' than the more holistic concept of sustainable development, and is easier for politicians to understand (Porritt 2009, p. 17; Restorick 2011). In addition, by quantifying impact into carbon, this approach works with the current and more advanced legislative framework of the Climate Change Act (DECC 2008).

This paper also appreciates that carbon is a currency that policy makers in Britain are familiar with and by making use of it, the impact of each project can be converted into units that are meaningful to both scientists and policy makers alike (Gatersleben et al. 2002). This quantification will facilitate easy comparison of different sustainability interventions to ascertain which policy levers are most effective at encouraging behaviour change. In addition, quantification would allow local authorities to demonstrate the impact of their work which may encourage support for funding and commitment from the upper echelons of the council for their work.

Conclusion

This paper has investigated how local authorities in London, in the UK, are working to tackle unsustainability and climate change, by supporting and encouraging individuals to transition to more sustainable lifestyles. The focus of this research has been shaped by a rising political interest in the use of behaviour change theories in British environmental policy, an increasing focus on local action as a result of the passing of the Localism Act and acknowledgement of the pivotal role that local authorities have to play in tackling climate change.

Through a series of interviews with sustainability officers within London, this paper has revealed that despite a lack of regulation, local authorities within London are presently working voluntarily to encourage pro-environmental behaviour amongst their residents in a variety of ways. However, evaluation and assessment of the effectiveness of these programmes are limited. It was found that there is a lack of reliable, robust and comparable information available on the performance of the sustainability projects. Therefore, evaluation of projects is limited and weak.

This acts as a barrier to the development of in-depth understanding as to which behaviour change levers and programmes are most effective at encouraging behaviour

change, and which programmes are delivering reductions in environmental impact. As a result, the potential contribution that such projects could make towards reducing emissions and meeting national targets legislated is largely unknown.

This paper therefore concludes that there is an evident need to build evaluation into the design of local authority sustainability projects. It is proposed that the performance of sustainability programmes be monitored using objective measures. This study recommends that the environmental impact of projects be quantified into carbon emissions abated. This quantification would facilitate comparison of different sustainability interventions and the behaviour change levers used and would also assist development of the evidence-base on pro-environmental behaviour change, which could ultimately lead to the delivery of more effective projects.

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