

Groundwork UK Learning Partnership

Communities Living Sustainably

Learning Report: Capturing Behaviour Change



**energy
saving
trust**

bre

 **nef**
economics as if people
and the planet mattered



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1.0 Executive Summary

This report draws out learning from the Communities Living Sustainably (CLS) programme up to September 2014 and is based on telephone interviews with the twelve CLS projects, a workshop with academic partners and project partners leading on evaluation activities and builds on findings from a review of CLS projects' monitoring and evaluation approaches conducted in August – November 2013. It looks specifically at activities related to understanding behaviour change and aims to highlight key issues and experience from the CLS projects as well as reviewing the range of differing activities.

Key Findings

The findings explore the logic underpinning the CLS projects' approaches in terms of the pro-environmental behaviour model they are using, the related theory of change and how information on behaviour change is being captured in terms of methods and measures.

There are a number of different behaviour change theories underpinning the projects. CLS projects are being delivered in line with a number of established behaviour change models. The fact that projects have either implicitly or explicitly aligned themselves with theoretical models gives the programme the opportunity to follow their progress and test the veracity of these theories in light of the outcomes delivered through the projects.

Common stakeholders and groups of people who are vulnerable to climate change can be identified across the CLS programme. Assessing whether the programme has supported change should be done in reference to these groups. Those vulnerable groups most frequently identified are: long term unemployed or people on low incomes; people in fuel poverty; older people; and people affected by extreme weather. The specific geographical focus or partnership base of some CLS projects has led to the identification of additional, specific vulnerable groups. This segmentation and targeting provides a valuable additional frame of reference for understanding the impact of different interventions and approaches to supporting the impact of behaviour change among vulnerable groups.

CLS projects are operating across a diversity of scales. This presents the opportunity to compare and contrast the relative merits of different approaches to behaviour change over time. CLS projects are operating at different spatial scales and taking different approaches to behaviour change with some attempting to bring about change as part of wider local strategies. The result of this diversity of project scale is that it presents the opportunity to compare and contrast the relative merits and impacts of different approaches to behaviour change over time. The merits of investing in intensive work to change the behaviours of a small number of people who can act as role models or champions with others in their community could be compared with the opportunity to provide additional impetus to wider programmes of behaviour change across a larger or more dispersed population.

Using locally relevant messages, practical action, pledges and follow-up contact help vulnerable groups to make greener choices. Factors identified by the CLS projects to promote greener behaviours emphasised the importance of relating messages to the local context to develop awareness and understanding about climate change. Saving money, particularly in relation to energy efficiency and providing free services and products delivered through trusted intermediaries were important hooks to support the adoption of greener behaviours. Using pledges and follow up visits, peer pressure and membership of or volunteering for environmental organisations were identified as ways to reinforce behaviour change.

The CLS programme is providing the opportunity to develop and test bespoke tools to capture behaviour change in communities. Projects have developed methods to capture baseline environmental behaviour information which is tailored to their project needs. These are either administered as online or paper-based surveys or developed as engagement tools to encourage pro-environmental behaviour change after capturing a measure of current behaviour.

There are common themes of behaviour change being addressed across the projects and sets of indicators which can be identified within each of these themes. A mapping of CLS project baseline studies and other evaluation documents has found common themes of behavioural change are being explored by the projects: energy, water, waste, food, transport, and preparedness. The behaviour supported can be broadly described as reduce use, find an alternative source, or avoidance. Various indicators have been used to describe specific changes relevant to the project, and when tested for robustness and appropriateness by the projects as part of their evaluation activities, could then form the basis of a core set of measures to be used in future programmes.

Academic partners are adding a distinct learning element to the programme, with the potential to deepen understanding about the change created by the projects. Three case studies are identified in this report highlighting a diverse range of research questions and methodologies adopted by academic partners to explore the change created by the CLS projects: Grounded Theory (Hull); Ethnographic research (Wythenshawe); and a technical study of airtightness and energy use of selected properties (Cumbria). This academic involvement will strengthen the robustness of the research, broaden the learning produced by the programme and should ensure that this learning is disseminated to a wider set of stakeholders.

Recommendations

Understanding Change & Impact

The Groundwork UK Learning Partnership should hold an evaluation review in 2015. This should in turn generate a report focused on:

- drawing out key findings on the scale and scope of behaviour change impact of the programme from project evaluation and research activities;
- review the project outcomes in the context of the behaviour change models underpinning the CLS projects;
- exploring project data to evidence the level of change supported across the vulnerable groups identified through this review.

Learning how communities learn about sustainability

- The Groundwork UK Learning Partnership should follow the different behaviour change models being tested by projects to share any evidence that may emerge about ways of encouraging behaviour change within communities that work effectively.

Supporting Peer to Peer Learning

- The Groundwork UK Learning Partnership should work with projects who require support through the test and stretch function to help identify behaviour change indicators relating to sustainability that are relevant to their project.
- All of the CLS projects have developed tools to capture change in their projects. These should be shared and brought together as a resource available to other communities on the online learning hub.

Informing The Big Lottery Fund's decision making

- The Big Lottery Fund should ask the Groundwork UK Learning Partnership to build upon the initial indicator framework developed in section 4.5 of this report to draw together a set of indicators across the sustainable behaviour themes that have been tested by projects and found to be useful. This could inform future programmes.

- The Big Lottery Fund should work with the Groundwork UK Learning Partnership to understand further the impact of scale and concentration of activity on delivering behaviour change outcomes, again to inform future programmes.
- In managing the CLS programme, the Big Lottery Fund should continue to encourage the development of experimental tools to capture behaviour change and allow these tools to be tested and learnt from.

Disseminating learning to wider stakeholders

- Academic partners are best placed to support dissemination activities within the academic field. The Groundwork UK Learning Partnership should encourage research findings to be published and actively promote these.
- The Groundwork UK Learning Partnership should share findings that emerge from the 2015 evaluation review with behavioural insight teams across Government, specifically within DECC and Defra.
- The Groundwork UK Learning Partnership should disseminate behaviour change tools created by projects and lessons learnt in their development (with project agreement) to other organisations supporting community action. Key organisations to target include WRAP, Partnership for Energy Control, Transition Network and Locality.
- Organisations and communities working to encourage pro-environmental behaviour change should be engaged to learn from the success of using locally relevant messages, practical action, a focus on saving money and peer support to promote vulnerable groups to make greener choices.

2.0 Introduction

This report draws out learning from the Big Lottery Fund's Communities Living Sustainably (CLS) programme up to September 2014. It focuses on activities related to understanding behaviour change and highlights key issues and experiences from the CLS projects.

The CLS programme is framed as a test and stretch initiative which aims to support new approaches to climate change adaptation, and is one of the few examples of projects which are aiming to support vulnerable people to adapt to climate change. Vulnerability across the projects is described in terms of climate change risk (increased flooding and heat) and socio-economic disadvantage (describing an area or groups of individuals within an area).

A key learning question for this review was to understand what promotes and inhibits vulnerable groups to make greener choices. Underpinning each CLS project is a theory of behaviour change which has shaped, either implicitly or explicitly, the design and logic of the projects. In collaboration with academic project partners and project partners leading on evaluation activities, this review aimed to identify these behavioural change theories and any evidence emerging, in these early stages of the projects, to support them. Section 4.1 highlights some of the models of behaviour change being applied by the projects.

There are currently few other examples of community-led initiatives that are supporting both climate change adaptation and mitigation activity, and targeting the most vulnerable groups in those activities outside of the CLS programme. This report draws out learning to inform and influence funding organisations including the Big Lottery Fund, local and national government as well as organisations supporting community-based activities.

This report is based on telephone interviews with the twelve CLS projects, a workshop with academic partners and project partners leading on evaluation activities, and builds on findings from a review of CLS projects' monitoring and evaluation approaches conducted in August – November 2013. The interviews were planned using background information on these activities under CLS, provided by the projects. Research to inform this report was carried out by the New Economics Foundation (NEF).

The Groundwork UK Learning Partnership produces quarterly reports capturing the learning emerging from CLS projects. Previous reports focused on three key themes, Energy, Growing and Green Space and Climate Change can be found at www.communitieslivingsustainably.org.uk

About Communities Living Sustainably

Communities Living Sustainably (CLS) is a £12 million programme funded by the Big Lottery Fund. Twelve communities in England have received funding to help deal with the potential impact of climate change and build the sustainability and resilience of their local community. The programme will run for five years, with these communities providing inspiration to other communities across England and sharing what they have learned with each other. A full list of these projects can be found in Appendix 2 and a map showing their location can be found in Appendix 1.

The Groundwork UK Learning Partnership is made up of five organisations each with expertise in tackling climate change and helping communities to live more sustainably. The partnership comprises Groundwork UK, the Energy Saving Trust, the Federation of City Farms and Gardens, the New Economics Foundation and Building Research Establishment (BRE).

This partnership has been brought together to encourage and support the funded, local communities to capture and share any lessons from their projects. A learning network has been established to encourage peer learning between communities, to better understand how communities can successfully live and work in a sustainable way and to provide information to inform and influence policy and practice both within the CLS programme and within the wider sustainability arena.

3.0 Context

This section of the report provides a snap shot of the scale of the challenge being faced by the UK if we are to live more sustainably, and an overview of models and theories of pro-environmental behaviour change. It is against this background of the scale of change needed that we will be reviewing pro-environmental behaviour change across the CLS projects.

Ecological footprint

Ecological footprintⁱⁱ analysis provides a broader understanding of human scale impact on the environment by providing a measure of the equivalent land area (measured in global hectares)ⁱⁱⁱ required to provide us with food, energy, provide resources, assimilate waste and re-absorb the greenhouse gases produced by the use of fossil fuels.

In 2010 it was estimated that there was a total of 12 billion hectares of biologically productive land on the planet. If all the biologically productive land and sea on the planet is divided equally by the number of people inhabiting it, our available footprint is 1.7 global hectares (gha) per person, which translates into 150 per cent of the Earth's capacity to meet these demands (WWF 2014)^{iv}. This compares with the average UK ecological footprint of 4.64 gha^v.

Carbon has been the dominant component of humanity's Ecological Footprint for more than half a century. By 2010 (the year for which the most complete dataset is available), carbon comprised 53 per cent. The primary cause has been the burning of fossil fuels – coal, oil and natural gas (WWF 2014). CO2 is the main greenhouse gas (GHG) emission associated with consumption in the UK, accounting for approximately three quarters of total UK GHG consumption emissions (Defra 2013). This has translated into CO2 reduction becoming a primary focus of pro-environmental behaviour change activity, and an overarching measure of impact.

Drivers of Local Impact

A great deal of analysis has gone into understanding what circumstances and behaviours lead to CO₂ emissions and therefore what needs to be changed to reduce these impacts. Minx et al (2013) analysed all areas in the UK to estimate the carbon footprints of cities and other human settlements. Their results indicated that 90 per cent of the human settlements in the UK are net importers of CO₂ emissions as a result of the goods and services brought into their area for production and consumption purposes^{vi}. Living in a high or low density population was not found to be a determining factor in the size of the carbon footprint, as some of the highest and the lowest carbon footprints were found in urban areas^{vii}. In their analysis the carbon footprint of areas was found to be mainly determined by the socio-economic profile of an area and the associated lifestyles of the residents, rather than geographic and infrastructural drivers.

This result indicates that it is *how we live*, rather than where we live which are the key drivers of impact. Carbon footprints were found to increase with growing income, advanced education of the population and the number of cars owned. The carbon footprint decreased with an increasing household size as resources were shared. Income was not found to be a more important factor than other socio-economic determinants when analysed at the scale of the settlement i.e. the town or city level. An extract of the data tables for this study is reproduced below showing the carbon footprints calculated for the areas where CLS projects are located. This uses 2004 data when emissions were at their peak.

Settlement Area	Estimate of Per Capita Carbon Footprint, 2004 (Equivalent tonnes per annum)*	CLS project
West Dorset	13.58	CLS in Dorset
Kingston upon Hull, City of	11.32	Green Prosperity
Newcastle upon Tyne	11.43	WEA Greening Wingrove
Salford	12.15	Irwell Valley Sustainable Communities
Liverpool	11.90	L8 Living Sustainably
Haringey	12.74	Manor House PACT
Middlesbrough	11.01	One Planet Middlesbrough
Manchester	11.66	Real Food Wythenshawe, Manchester
Sunderland	11.27	Sustainable Sunderland
Eden	13.41	Sustain Eden
Harborough	13.13	Sustainable Harborough
Swale	12.56	Sustainable Sheppey
Average UK	12.67	
Median UK	12.64	

*Extract of the data set from Minx (2013), it should be noted that this measure does not capture significant variations that may be present within the areas analysed.

Behaviour change in theory

The CLS Programme aims to support people to adapt to climate change through community scale interventions, and specifically to support people to make greener choices. To do this successfully requires an understanding of what drives people's behaviour. The model of human behaviour that is applied is important because it provides the logic for how the interventions are designed. Behaviour change theory is made of two complementary theories - models of behaviour and theories of change. Models of behaviour are generalisations of behaviour which aim to identify the underlying factors that influence specific behaviours, for example use of transport mode, or regularity of exercise; whereas theories of change show how behaviours change over time (Darnton 2008).

Models of individual behaviour change are drawn from psychology and sociology, and go beyond the simplistic description of human behaviour as a rational choice. The rational choice model underpins most mainstream economic theory, and subsequently shapes many policy interventions. The model proposes that individuals make decisions by calculating the costs and benefits of different courses of action, and choose the one that maximises their own self-interest. Policy built from this model focuses on providing sufficient information to support a rational choice, and incorporating social costs into price signals i.e. external costs borne by others from individual choices. An example of a social cost would be air pollution from cars in cities.

Policies or approaches based solely on the rational choice model of behaviour have had limited success in changing unsustainable behaviours. This is because they fail to take into account key elements which influence human behaviour. The rational choice model has a number of key assumptions for which it has been extensively criticised: (i) that individual self-interest is an appropriate framework for understanding human behaviour – when in reality human behaviour is influenced by social, moral and altruistic behaviours as well as self-interest; (ii) that rational behaviour is a result of cognitive deliberation - where in practice people use mental short-cuts (habits routines, cues) to simplify routine choices; and (iii) consumer preferences are not considered – yet as is well known in marketing theory, people respond on an emotional level about what to buy and how to behave which by-pass a cognitive decision-making process.

In contrast, individual behaviour change models which are informed by psychology and sociology, such as those being used in the CLS programme, emphasize the importance of a wider range of elements including:^{viii ix}

Attitudes	An individual's wider world view (beliefs) about a behaviour combined with the value (preference) the person attaches to those beliefs.
Norms	Social norms are a guide to how we should behave (or our perception of how we think people important to us think we should behave), and how we expect others to behave. Norms relate closely to theories of identity – defining who we are in reference to others.
Agency	An individual's sense that they can carry out action successfully and bring about the desired outcomes.
Habit	Frequent behaviours that require low levels of consciousness, with past behaviour influences our current behaviour. A habit is more difficult to change if: it is often repeated, there are strong related rewards, or the reward comes very soon after the action.
Emotion	An emotional response which by-passes cognitive thought in behaviour, for example fear of something.
Contextual factors	Factors outside the control of the individual and how they perceive them e.g. access to resources (money, time, information).

Theories of change apply models of behaviour to show how behaviours change. Mapping theories of change at the outset of a project allows theories to be tested in consultation with stakeholders who will be able to confirm whether the anticipated changes are realistic. The theory of change of a project should develop over the period of implementation as the initial results from the activities are reflected on against the overall aim of the project.

Changing behaviours - and in particular motivating more sustainable behaviours - is far from straightforward. Individual behaviours are deeply embedded in social and institutional contexts. We are guided as much by what others around us say and do, and by the 'rules of the game' as we are by personal choice. We often find ourselves 'locked in' to unsustainable behaviours in spite of our own best intentions. (Jackson 2005)²

Three types of theory of change are highlighted below which particularly relate to the approaches adopted by projects within the CLS programme:

- Changing habits: Psychologists' theories on changing habits focus on making unconscious actions conscious so that they can be reconsidered, and a new habit formed. This is explained in the literature as unfreezing the subconscious action and making the behaviour conscious to enable the merits of an alternative behaviour to be considered. A new behaviour is then adopted which becomes frozen as a new habit. To do this could involve visual cues – such as reminders to recycle, or holding a group discussion where the habit can be shared and scrutinised, or using pledges and follow-up visits (see Manor House case study on page 16).
- Learning based: In experiential learning theory everything occurs within a social environment. Knowledge is socially constructed and based on experiences. It then follows that this knowledge should be gained through real-life experiences which provide context for the information. (see L8 Living Sustainably, Liverpool case study on page 12).
- Staged models: These describe change as a process which can be broken down into definable stages. Identifying where people are in the stage determines the activities to support them through the other stages (see the WEA Greening Wingrove, Newcastle case study on page 12).

Behaviour change and greener living

In recent years there have been a number of projects and research studies which have attempted to apply this emerging science of behavioural insights to the challenge of reducing CO₂ emissions and combatting climate change.

One of the most significant of these projects was the three-year Green Living programme led by Green Alliance. This involved an analysis of a wide range of environmental messaging campaigns carried out by central government and others and a series of recommendations for how government should approach influencing behaviours around energy, water, waste and sustainable consumption using emerging theories of behaviour change. The project also involved ethnographic research, following a number of segmented audience 'types' to find out how national policy and messages influenced their environmental behaviours in the home.^x The main findings of the research were that messages to households around pro-environmental behaviours such as energy efficiency and recycling would only be effective if accompanied by effective infrastructure to support action – ie systems to make positive environmental behaviour easier or cheaper. The project also concluded that information campaigns from national government would not translate into action unless given in conjunction with local messages from trusted sources, ideally in a face-to-face approach.

Two examples were explored in detail to back up the findings of the Green Living project. ‘Act on CO₂’ was a governmental multi-media campaign designed to provide information and message about climate change and encourage individual behaviour change. The campaign included specific messaging around using less energy, taking the car less often, etc. and relied on the message of fear – what could happen if we don’t change our behaviour. All independent evaluation of the campaign pointed to it having a very limited effect on individual behaviours with many commentators pointing out the gap between a big message which is not supported with practical examples and clear links to related policies and schemes.

By contrast the ‘Love Food Hate Waste’ campaign led by WRAP was cited as a campaign built around some of the key elements of behaviour change theory including understanding the motivations and barriers of different socio-economic groups, ages and household sizes and linking campaign messages to practical changes in terms of packaging and labelling.^{xii}

In recent months a new initiative has been established by Forum for the Future and the consultancy Behaviour Change to apply best practice to the challenge of changing behaviour around energy use. The Partnership for Energy Control brings together environmental campaign groups, consumer-facing businesses and charities to develop a shared, more empowering language around ‘energy control’ with a view to testing out a range of face to face and mass marketing approaches to encouraging people to use less, waste less and pay less for their energy.

4.0 Main findings

4.1 There are a number of different behaviour change theories underpinning the projects.

Interviews conducted as part of this review identified a number of behaviour change models that either implicitly or explicitly underpin CLS projects. For the most part models of behaviour change are being stated more explicitly by the projects as they construct their monitoring and evaluation plans. CLS projects which identified specific behaviour models underpinning their projects are highlighted below: two related behaviour models (Theory of reasoned action / Planned behaviour model), and two examples of theories of change (Kolbs experiential learning cycle and the Transtheoretical model).

• **L8 Living Sustainably, Liverpool - Kolbs experiential learning cycle^{xii}.** This model underpins the design of the L8 Living Sustainably project. The project emphasises the importance of people in the community learning about sustainability by being involved in practical action, and participants having the opportunity to help design their own experience. Kolbs defines this as experiential learning or learning through doing. In the model, effective learning is seen when a person progresses through a cycle of four stages: (1) having a concrete experience; followed by (2) observation of and reflection on that experience; which leads to (3) the formation of abstract concepts (analysis) and generalisations (conclusions); which are then (4) used to test hypotheses in future situations, resulting in new experiences. L8 Living Sustainably focus on using an iterative model, giving people information and involving them in project activity, then using community champions to follow these participants and guide them through the cycle described above to chart their progress.

• **Irwell Valley Sustainable Communities Project, East Salford** - Theory of Reasoned Action/ Planned Behaviour Model. This model of behaviour change focuses attention on influencing people who are significant to the group being worked with (i.e. to influence their social norm), and making the outcomes of the behaviour important to the individual, and seem likely. The model suggested that if people evaluate the suggested behaviour to be positive (i.e. they have a positive attitude to the behaviour) and they think people who are important to them want them to perform the behaviour (social norm), this motivates them to act. Irwell Valley Sustainable Communities evaluators identified three key implications from this theory for the project’s implementation approach: (i) provide information at the point of decision making; (ii) provide an incentive to take action to influence the preference for the outcome; and (iii) enhance visible clues that neighbours and friends are doing something about it.

WEA Greening Wingrove, Newcastle - Transtheoretical model: The project has mapped their project activities against five stages of this six stage model to explicitly describe the behaviour change model underpinning their project. The Transtheoretical model is a theory of change model that assesses an individual's readiness to act on a new behaviour. Change is seen as a process rather than as an event that is completed or not completed. For individuals to progress through the stages they need to have a growing awareness that the benefits of changing behaviour outweighs the costs, the confidence they can maintain the change, and a strategy to help them make and maintain the change. The implications for project implementation of this model are that change does not happen merely with the provision of information, and that multiple interventions are needed to take people through this change process. Six key stages describe the process of an individual's behaviour change over time, with the final sixth stage being a normalisation of the behaviour with no temptation to revert to the old behaviour (referred to as termination). The diagram below maps the logic of the WEA Greening Wingrove, Newcastle's project's activities against the first five key stages.

	PRE-CONTEMPLATION	CONTEMPLATION	PREPARATION	ACTION	MAINTENANCE
The Individual					
	INDIVIDUAL IS UNAWARE OF THE PROBLEM	INDIVIDUAL IS AWARE OF THE PROBLEM – SERIOUS CONSIDERATION OF CHANGE IN BEHAVIOUR	INDIVIDUAL IS INTENDING TO TAKE ACTION	INDIVIDUALS MODIFY THEIR BEHAVIOUR	INDIVIDUAL WORKS TO MAINTAIN THE CHANGE
The Project Team					
Project Activities	<ul style="list-style-type: none"> £1million Greening Wingrove project Logos and branding Stakeholder mapping – meeting groups/organisations and individuals Publicity about award Website – www.greeningwingrove.org.uk Leaflets, newsletters, posters Events – Garden Festival, Apple Day Wingrove Barometer 	<ul style="list-style-type: none"> Website – information, advice and guidance Project Team signposting Events – Garden Festival, Apple Day Energy Champions – training, workshops, drop in sessions, front line staff training, ESOL course material Community Champions – training, mentoring and support Community Growing – clean up events, growing sites, demonstration gardens Wingrove Barometer Green Centre – information, demonstration and support 	<ul style="list-style-type: none"> Website – information, advice and guidance Energy Champions - volunteering Community Champions - volunteering Volunteering Opportunities – Community Orchard, event stewarding, Community Growing – working with volunteers, training Events, workshops, drop in sessions Community Innovation Fund – support for ideas, development of projects Green Centre – information, demonstration, support Community Interest Company Wingrove Barometer 	<ul style="list-style-type: none"> Website – information, advice and guidance Volunteering opportunities and training Community Champions – confident and able to provide support, information and advocate for change Green Centre – information, demonstration and support Community Innovation Fund – established projects used to demonstrate objectives Community Interest Company Support, guidance, handholding and mentoring Wingrove Barometer 	<ul style="list-style-type: none"> Website – information, advice and guidance Case studies and sharing learning journey Volunteering groups established and managed by community groups Community Champions – self managing to keep the message going Community Activists – making 'stuff' happen Community Interest Company – strong business model for sustainable activity Social Enterprises – established to support green activity Green Centre – demonstrations, information and support Sustainable communities making decisions and asking questions

Where projects have either implicitly or explicitly aligned themselves with specific models of behaviour change, this provides the programme with the opportunity to follow their progress and test the veracity of these behaviour change models in light of the project outcomes.

4.2 Common stakeholders and groups of people who are vulnerable to climate change can be identified across the CLS programme. Assessing whether the programme has supported change should be done in reference to these groups.

CLS projects generally describe all the people living in their communities of focus as 'stakeholders' in that they expect them to experience some level of change as a result of the project activities.. In order to design and evaluate interventions more rigorously, segmenting stakeholder groups is clearly desirable and something this review set out to identify. A number of common stakeholder groups can be identified across all CLS projects. These tend to be people directly involved in project activities e.g. residents (a number of projects specifically reference young people), project volunteers/champions, community organisations and partner organisations.

In addition most CLS projects have identified groups of people vulnerable to climate change in their communities, who are the target group for specific interventions or outcomes. Those most frequently identified are: long term unemployed or people on low incomes; people in fuel poverty; older people; and people affected by extreme weather. The specific geographical focus or partnership base of some CLS projects has led to the identification of additional vulnerable groups. This includes people whose livelihoods are likely to be affected by environmental impacts, such as fishermen in CLS in Dorset and farmers (Sustain Eden, Cumbria and CLS in Dorset). This segmentation provides a valuable additional frame of reference for understanding the impact of different interventions and approaches to supporting the impact of behaviour change among vulnerable groups.

4.3 CLS projects are operating across a diversity of scales. This presents the opportunity to compare and contrast the relative merits of different approaches to behaviour change over time.

At the outset of the CLS programme there was the stated intention to work in areas with populations greater than 10,000 people. The selected projects vary considerably in terms of the scale of the area in which they are delivering activities and the number of people they are attempting to reach. A basic categorisation is as follows.

- **Small scale (20,000 – 30,000 pop.):** Manor House PACT (four wards in London), the WEA Greening Wingrove project (inner West end of Newcastle upon Tyne), Green Prosperity (two wards in East Hull) and Sustainable Harborough (all residents of Market Harborough).
- **Medium scale (31,000 – 59,000 pop.):** L8 Living Sustainably (two wards in Liverpool), Irwell Valley Sustainable Communities (three wards in East Salford), Sustainable Sheppey (all residents of the Isle of Sheppey), CLS in Dorset (covering Bridport, Dorchester and neighbouring parishes), Sustainable Sunderland (four wards in central Sunderland) and Sustain Eden (the district of Eden in Cumbria).
- **Large scale (60,000 – 135,000 pop.):** Real Food Wythenshawe, Manchester (all residents in this area of the city of Manchester) and One Planet Middlesbrough (all residents of Middlesbrough).

Another aspect of the difference of scale across the CLS projects is the physical area of coverage, and how dispersed settlements are within the project area. This ranges from small wards in inner city areas to dispersed rural communities. The Eden District in Cumbria covers an area of 2,156 km², making it the second largest district in England and Wales. It also has the lowest population density of any English district meaning that Sustain Eden can be working with settlements of less than 100 people.

This diversity of scale has very practical implications for the support resources needed to impact on behaviour in a meaningful way throughout the duration of the project.

There is an obvious distinction between the geographical and population scale of the projects' chosen areas and the number of people directly benefiting from project activity. In all cases the CLS projects are working directly with much smaller groups of people within these whole populations, often, as referred to above, based on targeting or segmentation around vulnerable groups. However, in terms of behaviour change, outcomes are being targeted at both levels i.e. changing the behaviours of small numbers of people directly involved in activities while also changing the behaviours of the wider population through messaging or by providing other benefits in terms of advice and information.

For example, Sustainable Sheppey has identified a target population directly affected through project activities (5,695), but is aiming for the wider island population to benefit indirectly through adaptation planning and legacy activities. One Planet Middlesbrough is working within the context of a wider council strategy based on One Planet Living principles, allowing the project to connect into a range of existing programmes in the city. As in the case of Sustainable Sheppey, there is a smaller target number of residents expected to be directly affected by the project but aspiration to impact on the behaviours of a much wider population.

The result of this diversity of project scale is that it presents the opportunity to compare and contrast the relative merits and impacts of different approaches to behaviour change over time. The merits of investing in intensive work to change the behaviours of a small number of people who can act as role models or champions with others in their community could be compared against the opportunity to provide additional impetus to wider programmes of behaviour change across a larger or more dispersed population.

4.4. Using locally relevant messages, practical action and pledge follow up helps vulnerable groups to make greener choices.

Discussions with project leads and evaluation partners conducted for the purpose of this report highlighted a number of factors which they have identified as promoting vulnerable groups to make greener choices.

At the individual level, the importance of peer to peer learning mechanisms delivered by trusted individuals and organisations, building on existing local interests and using locally relevant communications were emphasised in developing awareness and understanding. Projects emphasised the importance of understanding the issues that are relevant to the local area and population and using these to address wider sustainability messages.

'Local environmental messages work better than global'

'Local organisations work at engaging people - local knowledge, linking in to specific gaps, align with other initiatives and know how to speak to service users'.

Projects also highlighted the importance of a diversity of activities across a number of themes to engage people through what they are interested in.

'It is a false economy to focus on one strand. A sustainable community needs to fire on all cylinders across a broad range of issues'

'To engage people - need a broad range of activities - as people engage with the bit they like most'

Saving money, particularly in relation to energy efficiency and providing free services and products delivered through trusted intermediaries (particularly for groups such as the elderly) were identified as important hooks to support adoption of greener behaviours. Using pledges and follow up visits, peer pressure, and in CLS in Dorset the membership of or volunteering for environmental organisations, were identified as ways to reinforce behaviour change.

Two case studies highlighting the importance of pledges to reinforce behaviour change are included in this review. Sustain Eden, Cumbria are using practical demonstrations in physical or financial terms to support behaviour change. Manor House PACT, London are using a model of 1:1 support in people's homes to identify and install simple measures, combined with agreeing pledges to reduce energy and water use.

Case Study: Sustain Eden, Cumbria

Demonstration to Action: Cumbria Action for Sustainability host over 20 events each year demonstrating energy efficiency, renewable energy installations, the use of natural and sustainable building materials and other green building techniques.^{xiii} Green Build Open Homes events have reached 128 people in the area; 86 (67%) of those said that they intended to take action as a result of the event. Of the 17 people who responded to the follow up survey, 15 people confirmed that they had taken action (19% of those pledging).

Cost Savings Advice: Cumbria Rural Enterprise Agency's advisors aim to support rural businesses to reduce fuel use and implement renewable energy schemes by presenting the cost saving advantages. To date the energy audits of businesses identified potential savings of £18,500, and a potential carbon saving of 168 tonnes. Sustain Eden will be capturing whether this information resulted in action as part of the follow up activities.

Case study: Manor House PACT, London

The PACT home Visits have been successful in encouraging the local community to adopt pro-environmental behaviours. The home visit works with the resident to collate information about their energy use and property. This is followed by advice about energy and water saving behaviours and measures which could be implemented and the installation of practical solutions such as draft proofing measures, or tap inserts. To date 518 home visits have been conducted, with residents committing to a total of 2,437 energy and water saving pledges.^{xiv} Three months later residents are re-contacted to confirm if they have implemented pledged changes. To date 83 per cent of clients visited state they have stuck to their pledges with 90 per cent of people stating that the initial visit changed the way they use energy in their homes. A resident that received a home visit stated: "*The Energy Advisor helped me make some changes to my flat and to think about how I can use less energy and water. I was really surprised when my next quarterly bill was down by almost £50 - these savings will make a real difference to my family*"

Key inhibitors to vulnerable groups making greener choices included, at the individual level, resident's engagement fatigue. This was found to be particularly true of time constrained people with young families and areas that had experienced a number of regeneration initiatives over recent years. Greening Wingrove in Newcastle has also noted that in a wider context of austerity people are being increasingly asked to volunteer more generally for activities in their area, this is restricting time available to support project activities and is resulting in 'volunteer fatigue'.

'Factors which inhibit action are expense, infrastructure and time. We had difficulty to get [this element of the project] up and running, now we have two groups and hope soon to publicise the difference it can make. People assumed it would be time consuming – so now we have changed the approach to hold open meetings.'

National factors can also have an inhibiting effect with negative messages about climate change and the complex language of sustainability alienating people. National policy changes, particularly in relation to renewable energy generation, the withdrawal of ECO and changes to the Feed In Tariff model were also identified as constraining the CLS projects.

'Doom mongering about climate change – the language of sustainability'

'Changing national policy – it is a moving feast e.g. FITS, ECO.'

Projects identified some specific inhibitors relating to the vulnerable groups they are working with as set out in the table below.

Stakeholder / Vulnerable Groups	Inhibiting factor
Elderly people	Lack of digital knowledge, lack of trust in new interventions and new organisations.
Social Housing tenants	Apathy, lack of understanding / education, engagement fatigue.
Young families	Time constraints.
People for whom English is not first language	Lack of engagement with written communication methods, lack of relevant messages or messengers.
Rural communities	Elderly population, older housing stock, limited public transport.
Urban communities	Transient population.

4.5 The CLS programme is providing the opportunity to develop and test bespoke tools to capture behaviour change in communities.

There are existing online tools that can be used by individuals to encourage and capture behaviour change. However projects have identified a need to develop bespoke tools to ensure the specific content and analysis needs of their projects can be met. In some cases the tools being used are modifications of existing tools which have been changed to fit the scope of the project, such as the Middlesbrough One Planet Living survey highlighted below. In other cases new tools have had to be developed to capture a more nuanced understanding of behaviour change, such as the Wingrove Barometer highlighted below. The CLS programme has enabled these bespoke tools to be developed and tested by projects.

Projects have developed methods to capture baseline pro-environmental behaviour information which is tailored to their project needs. They are using a combination of community-wide baseline surveys in online or paper formats to benchmark change against and activity based surveys with follow up surveys after an appropriate period of time has elapsed for activities to have taken place. Community champions are being used across the projects to increase use of the tools.

Below, we highlight four examples: Green Prosperity Hull's baseline survey, WEA Greening Wingrove, Newcastle's Wingrove Barometer and Middlesbrough's One Planet Living survey, both longitudinal study approaches; and Irwell Valley, Salford Sustainable Communities' engagement tool – the Personal Carbon Impact Tool.

Baseline Surveys

Baseline surveys have focused on capturing awareness, attitudes to climate change, and use of resources (waste, recycling, energy, water, food, transport) as well as existing technology measures installed in homes e.g. biomass boiler, cavity wall insulation. These will be used as a benchmark to measure change against.

Generally surveys are using scaled responses to determine attitudes and frequency of behaviour rather than requiring absolute measures, which are then complemented with before and after measures related to project activities e.g. through the use of smart meters. This data is primarily captured for the purposes of the project to measure the level of change they have supported.

Green Prosperity in Hull has completed one of the largest baseline surveys to date with 1000 responses.

Case Study: Green Prosperity Hull's Baseline Survey

The survey focuses on attitudes and behaviour to waste and recycling and acts as a baseline measure for the project which specifically relates to the project's outcome:

Reductions in the levels of all forms of domestic waste per household through the encouragement of residents to reduce recycle and compost more.

The survey also provides some information on the levels of interest and current involvement in food growing, relating to the project's outcome:

Increased numbers of people producing their own food leading to the development of new skills and a more sustainable lifestyle.

The survey is presented in 3 parts:

1. You and your household: name and contact details; demographic information (age, disability, and ethnicity); household occupancy and property type; and which newspapers are read regularly.
2. Recycling services: use of recycling bins (reasons for not using); frequency of bin collection, satisfaction with the council recycling service; frequency of using non-council recycling options (supermarkets, recycling centre, bulky item collection); important factors in managing waste (the list of options includes reducing the effects of climate change and low cost); likelihood of supporting swap shops to re-use goods.
3. Garden Waste & Composting. willingness to grow produce; composting behaviour (and reasons for not composting); use of (and reason for not using) the brown bin (council composting service); respondent's interest in volunteering with the green prosperity project.

Survey results have been statistically analysed for recycling behaviour, grow your own food, and interest in volunteering. Respondents to the survey will be re-contacted for follow up if they have expressed an interest in volunteering, food growing, recycling or signed up for an energy monitor.

Longitudinal Studies

WEA Greening Wingrove, Newcastle and One Planet Middlesbrough intend to follow a group of individuals as part of a longitudinal study to capture behaviour change. This approach is potentially the most insightful in terms of understanding what supports behaviour change within a particular context, particularly when individuals are from a representative sample of the community. However recruiting enough individuals willing to devote time to this study has been found to be a very practical barrier in the WEA Greening Wingrove, Newcastle project.

Case Study: Wingrove Barometer

Working with project partners Newcastle University, the WEA Greening Wingrove, Newcastle project is developing a series of tools to be used in a longitudinal behaviour change study of 200 people. The Wingrove Barometer is described as a series of ‘snap shots’ taken over the duration of the project to capture changes in attitude towards climate change, increased participation and perceived improvements in quality of life. The project is aiming to capture a cross-section of people from ‘highly engaged’ to ‘merely interested’ members of the Wingrove community to ensure that they are not just speaking to people already involved in pro-environmental activity. The first activity was a survey to establish a baseline of people’s attitudes and behaviours covering:

- Perceptions of the area and what needs to be improved
- Climate Change and ability to impact on the environment
- Behaviours in relation to food, waste, water, energy and travel
- Experience of and preparedness for the effect of heat waves and flooding

Community Champions provided support to help people complete the questionnaire. From this start point, further readings of the ‘barometer’ will be taken to assess and evaluate how people are progressing along a Wingrove journey.

The project has reported practical challenges to date in implementing this tool, including issues related to a lack of confidence of the community champions to take people through the tool and the time commitment required from people to take part which means they have had difficulties recruiting participants. In recognition of this, further design of the tool will be influenced by barometer participants to reflect how they prefer to engage with the project.

Case Study: Middlesbrough One Planet Living Survey

The most wide ranging dimensions of behaviour change are captured through the Middlesbrough One Planet Living baseline survey, developed from BioRegional's Ecological Footprint calculator. Each section relates to One Planet Living principles outlined in the table below. The project aims to re-contact 300 respondents to capture change.

Zero Carbon
Zero Waste
Sustainable Transport
Sustainable Food
Sustainable Water
Local Economy & Equity
Health & Happiness
Climate Change & Adaptation

In addition to capturing information on use of resources (energy, waste, food and water) and transport choices, the survey captures behaviours including:

- **Food:** packaging avoidance, seasonal, locally produced, organic food and locally purchased. Frequency of cooking with fresh ingredients.
- **Water:** saving water through more efficient appliances, collecting rainwater for the garden, and time spent in the shower.
- **Equity:** purchase of second-hand goods, recognition of logos related to fair trade and environmentally sustainable products.
- **Wellbeing:** self-assessment of health, wellbeing and sense of community.
- **Being prepared:** experience of physical problems related to hot weather and a self-assessment of preparedness to deal with hot weather and flooding.

Personal Impact Tools

CLS Projects have also designed tools to engage people in thinking about their impact and to encourage pro-environmental behaviours. The coverage in terms of resource use and behaviours are similar to the base line surveys but the results are intended to be used by both the participants and the project.

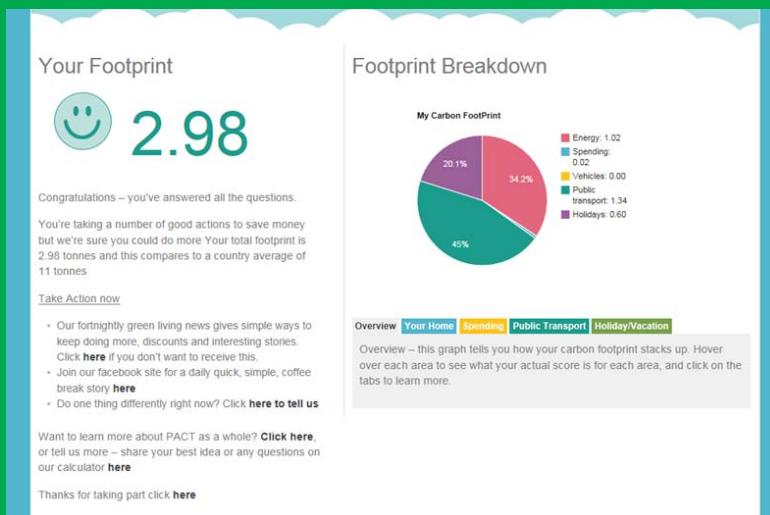
Case study: Personal Carbon Impact Tool (PACT), Irwell Valley Sustainable Communities, Salford

The PACT tool is an engaging web-based tool to capture household-level information on behaviour and use of resources developed by Irwell Valley Sustainable Communities and project partners WSP Group.

Rather than being primarily a way to measure carbon for the purposes of tracking the impact of the project, this tool uses the carbon measure as an engagement tool. At the end of this 10 minute process, individuals are presented with a calculation of their carbon footprint, a pie chart breakdown and commentary on how they could reduce their impact.

The tool is formed of six sections, covering the topics of:

- **Home:** Establishes how many people live in the house, the source of energy (including green electricity, Combined Heat and Power) and the age of boiler, estimated monthly expenditures by type of fuel and water usage. Behaviour information is captured in terms the tendency to turn off lights and closing curtains in winter. Heating timers and radiator thermostatic values measures are recorded.
- **Spending:** Estimates of spending are captured for the home (improvements, furniture, electrical / electronic equipment), consumption items (supermarket food, drink, eating out, clothes, cosmetics, services, and other goods) and pets. Behaviour information in terms of: food (frequency of meat consumption, consumption of fresh or pre-cooked meals, seasonal food consumption) and waste & recycling (typical bin size, frequency of recycling, composting).
- **Transport:** Model of transport is captured in terms of car use (how many cars the family used last year), public transport (use for a daily commute, estimate of miles), and holiday flights.



The first screen of the PACT presents the tool to the user as a savings calculator supporting them to save money whilst benefiting the environment. This reflects the behaviour change theory underpinning the project.

"We wanted to focus on money saving in the tool as this was quite a strong element of the feedback in the development of the tool. Our evaluation team felt quite strongly that if we just talked about carbon footprint that wouldn't be as engaging as cash."

The WSP Group has derived the carbon calculations from Defra, European Commission and other emission factors identified from research. Spending information on energy is converted into carbon in this methodology, and whilst this is an approximation, it is felt by the tool development team that this encourages people to input the information and is more accurate than asking people for meter readings.

A pop-up guide is available throughout which explains why a question is being asked and relates it to the scale of impact on the carbon footprint.

From the initial survey results, the average East Salford resident's carbon emissions were estimated to be 6.3 tonnes per year made up pretty equally of energy, spending and car travel . Public transport and plane flights made a much smaller contribution to carbon emissions. These results provide a guide to the areas of behaviour that the project need to target. Initial behaviour findings included 30 per cent of respondents appearing to leave their heating running all day even if they're not in. The tool can be accessed at <http://www.wsppactcalculator.com/>

4.6 There are common themes of behaviour change being addressed across the projects and sets of indicators which can be identified within each of these themes.

The CLS programme does not specify or provide a framework of behaviour change indicators for projects to work with, allowing individual projects to develop their own ways of evaluating change. One of the questions that the CLS learning partnership is exploring through this learning review is whether a common set of behavioural change indicators can be identified across the projects. These indicators, when tested for robustness and appropriateness by the projects as part of their evaluation activities, could then form the basis of a core set of measures to be used in future programmes.

Through a process of mapping indicators used in the CLS projects baseline studies, and other evaluation documents we have found that (with the exception of Real Food Wythenshawe, Manchester which focuses on food) common themes of behavioural change are being explored by the projects (energy, water, waste, food, transport and preparedness). The type of behaviour being supported can be broadly described as either to reduce use, find an alternative source, or avoidance e.g. prolonging the life of products through repair. There are also some common ways in how that behaviour type is evidenced in action (particularly in energy, waste and transport). These indicators focus on an individual's behaviour change, looking at things such as turning off appliances, reducing food waste or taking up more sustainable behaviours such as growing own food or increased walking or cycling.

There are fewer preparedness and economic behaviours being supported by the CLS projects. The most frequently cited are the production of emergency plans, buying more locally sourced food (captured under the behaviour theme of food) and supporting the set-up of green enterprises (L8 Living Sustainably, Liverpool, Green Prosperity Hull) or community enterprises (CLS in Dorset, Sustainable Harborough, Leicestershire, Sustainable Sunderland, Manor House PACT, London). As part of this review, initial work has been carried out to collate these indicators into a framework. The diagram below provides an example of how a framework could be constructed to illustrate these common behavioural themes and types of behaviour. A sample of actions and indicators of behaviour drawn from across the projects are represented. This framework could continue to be developed with the agreement of the Big Lottery Fund to explore consistency of approach across projects and inform the evaluation of future programmes.

Behaviour change themes and indicator examples

Behaviour Theme	Behaviour Type	Action	Indicators	
Energy	Reduction Alternative Sources Avoidance	Use of appliances	Turning off appliances	Cook in energy efficient way
Water		Installation	No. of Shower heads, tap inset,s etc.	No. of Water butts
Waste		Composting	Composting uncooked food / garden waste	Frequency of food thrown away
Food		Growing	Knowledge of growing	Growing own fruit and vegetables
Transport		Active transport	Frequency of walking	Frequency of cycling
Preparedness	Planning	Emergency planning	Preparedness for effects of extreme weather: heat waves and flooding	
Economic	Enterprise	Business start up (green)	Number of businesses	Qualities of businesses

4.7 Academic partners are adding a distinct learning element to the programme, with the potential to deepen understanding about the change created by the projects.

Partnerships with academic organisations have been formed by eight of the CLS projects to support them to deliver their monitoring and evaluation activities.^{xvi} Four of the projects are hosting PhD students who are responsible either for the development of the methodological approach (Green Prosperity Hull, Sustainable Harborough and Real Food Wythenshawe, Manchester) or are conducting specific pieces of research (Sustain Eden, Cumbria).

The involvement of academic partners is opening up opportunities to conduct in-depth studies of project activities and bring greater insight into how to effectively support change. It will strengthen the robustness of the research, broaden the learning produced by the programme and should ensure that this learning is disseminated to a wider set of stakeholders.

Some examples of the diverse range of research questions and methodologies are highlighted on the next page.

Green Prosperity Hull: Academic partners in Hull University are applying the research methodology grounded theory, developed by sociologists Barney Glaser, Anselm Strauss^{xvii}. Unlike other research approaches the starting point for research is not a hypothesis against which data is tested. Grounded theory is an inductive methodology that aims to develop theory from the data by using empirical research. As such it frees the researcher from preconceptions in the collection and analysis of data. Emphasis is placed on doing on-the-ground work and the applying analytical processes of empirical generalisation.

Applying this approach offers an opportunity to build a more nuanced understanding of behaviour and theories of change in communities. The Green Prosperity project targets two relatively deprived wards, but also involves other residents from across the city. Research to date has identified differences between the two wards and other locations, including in motivations and behaviour. For instance, factors including location, household type, and access to gardens are being highlighted as issues that influence participation in food growing activities, which is a key strand of the project. Interviews have also identified potential differences in locations with more middle class participants discussing climate change and green motivations for action, whereas in the two target wards self-sustaining lifestyle to support wellbeing e.g. grow your own food, is highlighted as a key motivator. The project is very focused on analysing different levels of participation from the two wards in devising and shaping activities to maximise participation from the two wards. For instance, the project has developed a family growing project to help 10 families from the two target wards, plant their own food gardens, in a project involving local volunteers.

Real Food Wythenshawe, Manchester: This is the only CLS project using the single lens of food to promote greater community cohesion and engagement with climate change. Academic partners in Salford University are interested in the potential of urban agriculture, and will be employing an ethnographic approach^{xviii} to understand the outcomes of the CLS project. The researchers noted the need to avoid the local trap of some food systems research identified by Born & Purcell (2006). This is an implicit assumption that local food systems are preferable to systems at a larger scale because they are inherently more ecologically sustainable and socially just (rather than proved to be). Born and Purcell argue that social justice and sustainability are not inherent qualities of scale, they are rather determined by social actors. For example, how the food system is designed and the business models would be key drivers of these social outcomes.^{xix}

Sustain Eden, Cumbria: Six ‘hard to treat’ solid wall homes common across the district will be the subject of an energy efficiency research project over the winter period of 2014 as part of the Cold to Cosy Homes project. Working with a PhD student at University College London, the properties will be tested for airtightness and energy use logged. This research will help to establish typical values for energy efficiency for similar properties across the county. The householder will benefit from the project by understanding their energy use better and will receive free advice on how to reduce their energy bills.

This academic research will create a body of evidence over and above the intended outcomes of the programme. It adds significant potential to disseminate findings more widely and for the programme to inform and influence academic thinking as well as policy and practice.

5.0 Recommendations

This report makes a number of recommendations; for the CLS Learning Partnership, for funding organisations including the Big Lottery Fund and for stakeholders interested in supporting behaviour change, including national and local government. These are summarised below:

5.1 Understanding change & impact

- **The Groundwork UK Learning Partnership should hold an evaluation review in 2015.** This should in turn generate a report focused on:
 - **Drawing out key findings of the scale and scope of behaviour change impact of the programme from project evaluation and research activities.** Academic partners and project partners leading on evaluation activities came together for a one day workshop to explore the emerging findings on supporting behaviour change from the projects for this review. The review workshop would bring this group back together to explore the impact of the programme to date.
 - **Reviewing the project outcomes in the context of the behaviour change models underpinning the CLS projects.** The planned impact review should explore the veracity of the behaviour change models used by the CLS projects.
 - **Exploring project data to evidence the level of change supported across the vulnerable groups identified through this review.**

5.2 Learning how communities learn about sustainability

- **The Groundwork UK Learning Partnership should follow the different behaviour change models being tested by projects to share any evidence that may emerge about ways of encouraging behaviour change within communities that work effectively.** This would be useful to understand more fully how individuals and communities are motivated to move to action and be able to provide tested examples of this. In particular, it would be valuable to understand the importance of project success to operating within a wider local authority framework. The One Planet Middlesbrough project provides the opportunity to explore the value of this approach.

5.3 Supporting peer-to-peer learning

- **The Groundwork UK Learning Partnership should work with projects who require support through the test and stretch function to help identify behaviour change indicators relating to sustainability that are relevant to their project.** This would provide support to projects with sourcing and selecting appropriate indicators.
- **All of the CLS projects have developed tools to capture change in their projects. These should be shared and brought together as a resource available to other communities on the online learning hub.** Examples of these include the tools outlined in section 4.5 of this report as well as the more specific follow up surveys and pledge making tools developed as part of the programme.

5.4 Informing the Big Lottery Fund's decision making

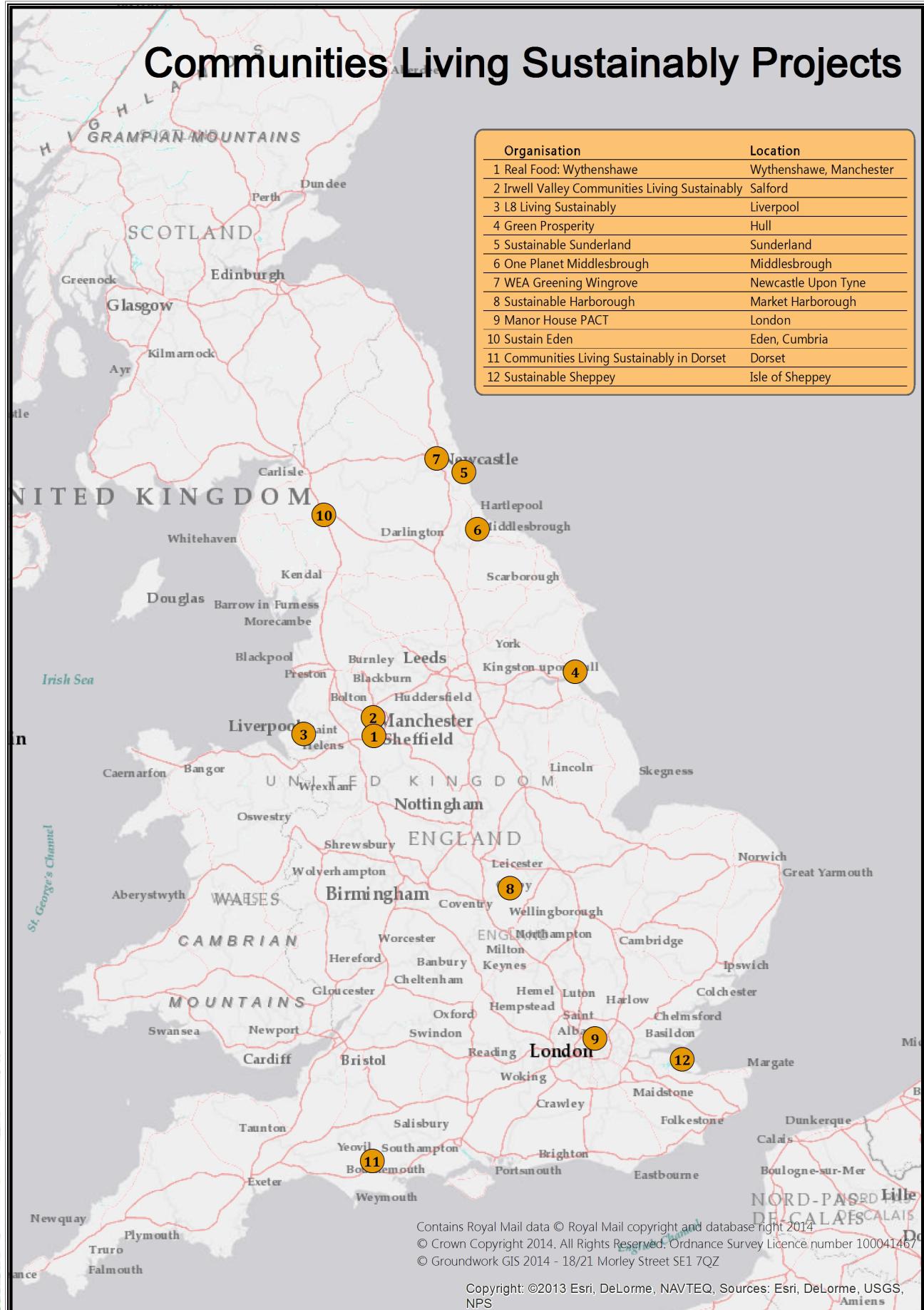
- **The Big Lottery Fund should ask The Groundwork UK Learning Partnership to build upon the initial indicator framework developed in section 4.6 of this report to draw together a set of indicators across the sustainable behaviour themes that have been tested by projects and found to be useful.** This could then inform the production of a set of behaviour change indicators which could be used as an indicator bank for future programmes.

- **The Big Lottery Fund should ask The Groundwork UK Learning Partnership to build upon the initial indicator framework developed in section 4.6 of this report to draw together a set of indicators across the sustainable behaviour themes that have been tested by projects and found to be useful.** This could then inform the production of a set of behaviour change indicators which could be used as an indicator bank for future programmes.
- **The Big Lottery Fund should work with the Groundwork UK Learning Partnership to understand further the impact of scale and concentration of activity on delivering behaviour change outcomes.** The diversity of scales and approaches across the CLS projects may allow the Big Lottery Fund to understand the most appropriate size of an area for a community-based project to influence pro-environmental behaviour change. It could also inform how investment could be prioritised with regard to intense targeted work with smaller populations and wider less intensive work within larger areas. This could help to inform future programmes by identifying the most appropriate scale to frame future programmes around.
- **In managing the CLS programme the Big Lottery Fund should continue to encourage the development of experimental tools to capture behaviour change and allow these tools to be tested and learnt from.** The programme is enabling projects to develop and test bespoke behaviour change evaluation tools. This provides the opportunity for projects to share with the Big Lottery Fund and others what they have learnt from their experience including those approaches that have not worked well and the reasons for this. Projects should be supported with the development and testing of these tools as part of the Groundwork UK Learning Partnership test and stretch function.

5.4 Disseminating learning to wider stakeholders

- **Academic partners are best placed to support the dissemination activities within the academic field. The Groundwork UK Learning Partnership should encourage research findings to be published and actively promote these.** The Groundwork UK Learning Partnership should continue to engage with the academic partners working on project evaluation as part of the 2015 evaluation review to enable the broader learning that their work will bring to the programme to be captured and shared.
- **The Groundwork UK Learning Partnership should share findings that emerge from the 2015 evaluation review with behavioural insight teams across Government, specifically within DECC and Defra.** There is wide cross- government interest in behaviour change and insights for policy making which cut across concerns of health, inequality and sustainability issues amongst others. These are currently being discussed in a Cross Government Behaviour Change Network. Findings from the CLS programme could inform these discussions.
- **The Groundwork UK Learning Partnership should disseminate behaviour change tools developed by projects and lessons learnt in their development to other organisations supporting community action.** Key organisations to target include WRAP, Partnership for Energy Control, Transition Network and Locality.
- **Organisations and communities working to encourage pro-environmental behaviour change should be engaged to learn from the success of CLS projects in developing and testing approaches.** Using locally relevant messages, practical action, a focus on saving money and peer support to promote vulnerable groups to make greener choices have been identified in recent studies as being the most likely ways of embedding behaviour change on environmental issues. This is a key area of impact for the CLS programme with significant potential to help other communities, networks, programmes and funders learn from the experience of projects.

Appendix 1 - Map of CLS projects



Appendix 2 - CLS Project Summary

Project Name	Amount awarded	Project description	Duration	Location
Sustain Eden	£955,270	Working with the remote, dispersed community of Eden in Cumbria. The project will look to tackle fuel poverty, promote energy efficiency and renewables, address flood risk issues through effective planning and investigate potential sustainable transport models. There is a strong emphasis on community resilience and skill sharing with particular focus on older people as a demographic most at risk	3 years	Penrith, Cumbria
Green Prosperity	£812,956	The project looks to support a 'Green Homecare Service' which aims to promote sustainable transport options for care workers. The project will also support communities to become more energy efficient, reduce waste and tackle fuel poverty through practical advice and home visits. The project will also create an Eco-house demonstration project which forms an interactive element of the project.	3 years	Hull
Manor House PACT	£999,049	Aims to deliver the PACT (Prepare Adapt Connect Thrive) programme. The PACT will work under the strands aimed at promoting access to open spaces, providing 'Green' vocational training opportunities and promoting interaction in the local neighbourhoods with a focus on climate change	3 years	London Boroughs of Hackney and Haringey
Sustainable Sheppey	£946,275	This project aims to promote the importance of local resources, making greener choices and developing new skills. The project will look to promote sustainable living through a Sustainable Homes Initiative; a community food initiative and renewable energy sources particularly a waste oil recycling scheme. Employment and skills will also be increased through the provision of environmental awareness courses and training opportunities for energy champions.	3 years	Isle of Sheppey
Sustainable Sunderland	£999,066	A partnership approach across Sunderland. The project aims to increase the awareness and understanding of climate change through activities aimed at reducing fuel poverty; increasing environmental awareness particularly among social housing tenants and school children. Volunteers will also be provided with certified training which aims to improve their employability. The project will also look to engage the BME community who are traditionally less aware of climate change issues.	4 years	Sunderland

L8 Living Sustainably	£917,045	Operates across the Princes Park and Riverside areas of Liverpool. The project seeks to promote energy efficiency and sustainable energy sources including Solar PV and encourage local food growing through the creation of a patchwork farm. A community energy venture will also seek to provide local households with electricity at a reduced rate, including potential savings of around 30 per cent on household bills	5 years	Liverpool
One Planet Middlesbrough	£998,928	Promotes the principles of One Planet Living across Middlesbrough and the Tees Valley. The main focus of the project will be on sustainable transport; local and sustainable food; sustainable water; climate change adaptation; zero carbon and zero waste. The project looks to achieve behaviour change among deprived communities, those with low educational attainment and people living with a variety of health issues.	5 years	Middlesbrough & Tees Valley
Sustainable Harborough	£999,962	This project has a focus on the town of Market Harborough as a 'test bed' for sustainable living, and looks to improve the environmental sustainability and resilience to climate change of an entire town. The project also aims to make an impact in water and energy efficiency, food growing and bio-diversity, as well as look to make an economic impact through the launch of a sustainable energy company and the Harborough Currency for example. RCC will also develop a demonstration house which will be retro-fitted for more sustainable living. The property will be used as show home for sustainable living with events held to highlight the changes that can be made.	5 years	Leicestershire & Rutland
The Irwell Valley Sustainable Communities Project	£999,986	A community-led project based in Salford. The project will increase awareness of climate change issues through community based working and interaction with local people to develop solutions which are most applicable to them. A key element of the project will be to develop land for the community to use for food growing initiatives. A carbon impact tool will also be used by local residents to raise awareness of the impacts behaviour change can have with a focus on fuel bills and energy savings. Green Champions will also support the community by promoting sustainable living.	5 years	Salford

Greening Wingrove	£978,147	Based in the Wingrove district of Newcastle. The project activities will focus on three main strands which are the maximisation of community assets, conscious consumption and a community innovation fund. The work areas include demonstration projects on topics such as food growing, water usage and energy generation. The community innovation fund will support the local community to develop initiatives and activities which will form part of the wider project with each initiative being responsive to the needs of the local community and be designed by them.	5 years	Newcastle upon Tyne
Real Food: Wythenshawe	£1,000,000	Based in Wythenshawe, Manchester this project aims to promote greater community cohesion and engagement with climate change. The project will include five flagship projects which draw on local resources. The five flagship projects include an indoor growing system; outdoor growing spaces; a walled community garden and sustainable eating. The project will also launch five community hubs to provide support and advice with a focus on the individual flagship projects. Examples of the community hubs include the Manchester College and University Hospital South Manchester.	5 years	Manchester
Communities Living Sustainably in Dorset	£960,523	This project aims to improve resilience to climate change across Dorset by delivering a range of activities to address the greatest needs. It will involve engaging communities and businesses to adopt 'green' behaviours, supporting schools to achieve 'eco-school' status, recruiting residents as volunteers to help people in their community improve their resilience to climate change and developing social enterprises such as a wood fuel enterprise that uses local woodland resources.	3 years	Dorset

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- WWF (2014) Living Planet Report 2014 – species and spaces, people and places. WWF International.

i This complements the finding of the CLS Climate Change Adaptation Report which highlighted three broad groups of people vulnerable to climate change in the CLS communities: people whose livelihoods are at risk (farming, sea fishing e.g. CLS in Dorset), people who do not have resources (low income e.g. Greening Wingrove, Newcastle), or particular groups that face social isolation (older people, single mothers, mothers who do not speak English across projects).

ii The Ecological Footprint concept was originally developed in 1990 by Mathis Wackernagel and William Rees at the University of British Columbia. It should not be interpreted as an impact indicator, or a complete measure of environmental pressure. It aims to provide a measure of one key dimension that contributes to the sustainability or unsustainability of human activities: the extent to which the Earth's productive ecosystems have sufficient regenerative capacity to keep up with society's metabolic demands. Source: Global Footprint Network <http://www.footprintnetwork.org/>.

iii A global hectare is a productivity weighted area used to report both the biocapacity of the earth, and the demand on biocapacity. Because areas of land have different productivity, the global hectare is normalized to the area-weighted average productivity of biologically productive land and water in a given year. Source: Global Footprint Network <http://www.footprintnetwork.org/>.

iv WWF (2014) Living Planet Report 2014 – species and spaces, people and places. WWF International,

v Stockholm Resilience Centre - <http://www.reap-petite.com/>

vi Minx JC Baiocchi G. Wiedmann T. Barratt J. Creutzig F. Feng K. Forster M. Pichler P. Weisz H. Hubaeck K. (2013) Carbon footprints of cities and other human settlements in the UK. Environmental Research Letters. 8 (3) <http://iopscience.iop.org/1748-9326/8/3/035039/article>.

vii This study of 434 municipalities across the UK uses data from 2004. The methodology directly links the production of goods and services across global supply chains to local consumption activities. The authors apply a consumption-based definition of the Carbon Footprint. This includes all CO₂ emissions released in the global supply chain (direct and embodied) during the production of final goods and services consumed on the territory of a human settlement within a given year. Carbon footprints at a regional level were estimated from a model of trade activities between 178 economic sectors in the UK and three world regions. Energy and process-related CO₂ emissions were then allocated to the final consumption of goods and services in the UK. Emissions from land-use change and non- CO₂ emissions were not included in the analysis.

viii Adapted from Darnton (2008)

ix Not all of these elements are included in all of the individual behaviour change models drawn from this literature, however Agency, norms and habit appear in most models. Applying these concepts to economics to improve on the limited rational choice model, Dawnay and Shah (2005) have distilled concepts from behavioural economics into seven key principles to provide a theoretical underpinning for a more effective policy making approaches.

x Green Alliance 'Bringing It Home - Using behavioural insights to make green living policy work' March 2011, and 'Neither Sermons Nor Silence – The case for national communications on energy use' May 2012

xi WRAP 'Household food and drink waste: A people focus' October 2014

xii Often cited as Kolb's four stage model, Kolb refers to it as Lewin's experiential learning model referencing Lewin K (1951) Field Theory in Social Sciences London

xiii For more information about SustainEden see <http://www.cafs.org.uk/projects/sustainededen/>

xiv Manor House PACT have a target of delivering 900 home Visits and assessments from a domestic energy advisor over the three year project period.

xv This measure of carbon footprint cannot be compared directly with the table in section 3 due to different accounting approaches (methodologies).

xvi Sustainable Sheppery, L8 Living Sustainably and CLS in Dorset are currently delivering their own evaluation activities and Sustain Eden and Manor House PACT have contracted consultants.

xvii Original theory published in Glaser, Barney G. and Strauss, Anselm L. (1967) The discovery of grounded theory: strategies for qualitative research. Chicago.: Aldine. More information on the approach can be found at <http://www.groundedtheory.com>; http://en.wikipedia.org/wiki/Grounded_theory#cite_note-4

xviii The scientific description of human societies (cultures, customs, habits).

xix Born, B. Purcell, M. Avoiding the local Trap – Scale and Food Systems in Planning Research. Journal of Planning Education & Research. December 2006 26: 195-207.