

Forestry, sustainable behaviours and behaviour change – setting the scene



Summary Report

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Introduction

The concepts of behaviour and behaviour change have recently emerged as core areas of interest for central government. There are a number of departmental initiatives that focus on behaviour and behaviour change, most notably in relation to health, the environment, travel, and energy use. The Forestry Commission and the wider forestry sector are increasingly interested in these concepts, particularly as they relate to the principles, aims and objectives of sustainable forest management. This interest relates to two key categories of behaviour:

1. Behaviours related to the sustainable management of trees, woods and forests (TWF).
2. Positive behaviour brought about through interactions with TWF.

Despite the recent explicit focus on behaviour and behaviour change, it is important to acknowledge that this is not an entirely new topic area for the forestry sector. Much activity is already focused on encouraging particular types of behaviour within each of the categories above, such as woodland expansion and sustainable woodland management, physical exercise and renewable energy use. A range of intervention types are already employed, for example, grants, campaigns, regulation and targeted programmes and projects. However, these are not currently set within an explicitly behavioural context.

The Social and Economic Research Group (SERG) at Forest Research is currently engaged in a four year research programme to help situate forestry in relation to debates and discussions surrounding behaviour and behaviour change, and to explore ways in which behavioural insights might be used to inform sustainable forestry policy and management. This report summarises the key findings and insights emerging from the review phase of this research programme. The review has two main aims:

1. To summarise relevant research and practice in order to describe and understand the contemporary focus on behaviour and behaviour change.
2. To begin identifying important insights and key areas of interest for the forestry sector.

A webpage has been created (<http://www.forestry.gov.uk/fr/INFD-923FBR>) where readers can download individual review reports covering the main topics summarised in this report, namely, [current governmental policy relating to behaviour and behaviour change](#), [key behaviour and behaviour change theories and models](#), and [evaluations of behaviour change interventions](#). A [discussion paper setting out ideas about how the concepts of behaviour and behaviour change might relate to forestry policy and management, and the implications for research](#) is also available.

Review methods

The objectives of the review were as follows:

1. To set out the current policy context for behaviour and behaviour change.
2. To set out key relevant theories, models and conceptual frameworks.
3. To review evaluations of behaviour change interventions across a range of sectors, and to set out the range of different approaches and to assess their effectiveness.
4. To identify gaps in evidence relating to behaviour and behaviour change.

Online databases were searched to identify primarily academic evidence. Grey literature searches were conducted using Google and by searching government department websites (Department of Health (DoH), Department for Environment, Food and Rural Affairs (Defra), Department for Transport (DfT), Department for Energy and Climate Change (DECC) and the Cabinet Office). Table 1 shows the search terms used.

Table 1: Indicative terms and key words used for database searches

Behaviour	Change Maintain Understand	Policy	Plans, actions, strategies
		Theory	Principles, models, segmentation, values, attitudes
		Natural settings, forest, wood, countryside, greenspace, landscape	Grants, interventions, regulation, campaign, events

Approximately 190 relevant references were identified. Many of these related to health, climate change and sustainability issues, with fewer related to transport, energy, and the environment. The literature provides international as well as UK examples. Table 2 provides a summary of the search results and selection criteria for each review topic.

Table 2: Bibliographic searches and selection by review topic

Report sections	search results	selected for review	Selection criteria
Policy context	43	32	Focus on behavioural insights informing policy and policy makers.
Theories and models	121 (+59)	87	Reviews of behavioural theory and/or models. Seminal literature describing the most prevalent theories and models (short listed). Literature applying the most prevalent theories to the analysis of forestry, or other environmental behaviours.
Evaluations of interventions (no	53	25	Reviews, systematic reviews, reviews of reviews

greenspace dimension)			
Evaluations of interventions (greenspace dimension)	50	18	Evaluated interventions that take place outdoors in greenspaces, woodlands or other natural environments.

Key review findings

Policy context

Policy makers have long sought to influence people’s behaviour for the benefit of individuals, society, or the environment. Traditionally, policy instruments have been limited to things like legislation, regulation, financial incentives, or disincentives – so called ‘carrot and stick’ approaches. However, in certain contexts these traditional measures have come to be viewed as ineffective, or as potentially damaging to business because of the administrative burden they impose. Therefore, alternative approaches utilising behavioural approaches are increasingly being developed to provide a broader mix of policy options. The complex nature of the attitudes, motivations and choices driving particular behaviours, however, presents a key challenge for policy makers, particularly as they try to avoid being overly intrusive, or abusing fundamental rights of freedom and choice.

Interventions focused on behaviour and behaviour change represent a significant area of focus for the current coalition government across a range of policy domains. The interest in behaviour was stimulated by ideas that citizens can be ‘nudged’ into changing their behaviour. In 2010 The Cabinet Office set up a Behavioural Insights Team (BIT) to look beyond traditional policy instruments, such as legislation and regulation, and to explore new ideas and approaches. Examples of departmental initiatives include:

- Department of Health (DoH) behavioural interventions focused on reducing obesity, smoking, and drinking, and promoting healthy eating.
- DECC (Department of Energy and Climate Change), Defra and Scottish Government behaviour change initiatives focused on climate change and energy use.
- The Department for Transport (DfT) has produced a behavioural insights toolkit to highlight how a behaviours approach can be used to achieve sustainable transport policy objectives.
- The Sustainable Lifestyles framework (2011), Greener Living Fund (2009-2011) and the Inspiring Sustainable Living Fund (2010/11) led and funded by Defra focus on sustainable development and pro-environmental behaviour.

Within the forestry sector many interventions and programmes have focused on influencing behaviour. In recent years, for example, emphasis has been placed on

encouraging physical activity in woodlands for health benefits. Woodland grants are used as incentives to encourage a range of behaviours in woodland managers and owners, such as management for biodiversity, the creation of new woodlands, management of woodlands for woodfuel or management to encourage public access. The [discussion document sets out a working typology of mechanisms](#) used by the FC and other parts of the forestry sector to maintain, encourage or change behaviours.

Theories and models

Broadly speaking, human behaviour is the focus of all of the social sciences and, consequently, numerous theories and models have been proposed which seek to define and explain behaviour and/or behaviour change. Theories emanating from psychology and economics, focused on rationality and individuals as decision-makers currently dominate government interventions. Sociological theories focused on socio-economic contexts and technology are, however, gaining prominence. 'Behaviour' is a contested concept in that it is defined and analysed variously across different disciplines.

Individually focused theories include the Theory of Planned Behaviour (TPB), the Health Belief Model (HBM) and Stages of Change (SoC) theory (amongst many others). These emphasise the cognitive processes of individuals, such as their beliefs, attitudes and perceptions. Many of these theories, including the very widely applied TPB, identify the importance of perceived control (or 'self-efficacy') in influencing behavioural intention and action.

Various theories, such as SoC and the Diffusion of Innovation (DoI) theory, recognise that behaviour change is usually a prolonged process, with potentially multiple stages. They emphasise the importance of allowing time for behaviour change to occur and highlight the need for various interventions as people's needs and motivations change whilst they progress through the process.

Theories focused on the socio-economic and/or technological contexts of behaviour, such as social practice theory and DoI, are identified in a number of more recent government documents. These theories place some agency for behaviour change in social contexts and/or technologies themselves, rather than positing individuals as the primary agents. These perspectives offer a multitude of new ways to understand and influence behaviour, such as ensuring opportunities to reflect upon and critically evaluate established behaviour or practices. The proven impact of face-to-face advice and engagement may well relate to its capacity to create these reflective opportunities.

Various attempts have been made to integrate insights from across different behaviour and behaviour change theories into single 'models' or 'frameworks'. These are necessarily simplifications of behaviour and the underlying theories, but some (e.g. the

'energy cultures' framework) provide useful ways of thinking about behaviour and designing interventions.

Evaluations of interventions

The review covered evaluations of interventions with an explicit focus on changing behaviour. Interventions were grouped into two broad categories - those that are not related to greenspace and those where greenspace represents a key dimension. The primary aim in reviewing evaluative evidence was to identify key factors that emerge as particularly successful in influencing and sustaining behaviour change. These key factors are summarised here.

Interventions aimed at health, energy usage, transport and pro-environmental behaviours which target the social environment of individuals are more effective than those which just focus on the individual. These interventions can involve the families of individuals, for example, but can also focus on embedding changes in behaviour and attitude within wider social contexts, such as community structures and social networks.

Interventions which adopt a multi-faceted approach are more effective than single approach measures. Projects that combine technical / infrastructure approaches with education, training and community-based activities, for example, are more likely to have a more profound and lasting affect on behaviour. Furthermore, interventions that adopt a participatory approach, whereby participants are actively involved in the process of intervention design, emerge as more effective.

Some behavioural change intervention approaches and techniques emerge as particularly effective. These include goal setting, self-monitoring, provision of feedback on performance, and motivational interviewing. Information provision, educational approaches and passive forms of advice giving emerge as less effective, unless they form part of a multi-faceted approach.

There is evidence that participating in nature based interventions can have many benefits. Evaluations report increases in physical exercise, sustained visits in the outdoors post intervention, improved mental health and positive attitudes towards local woodlands and greenspaces.

Attracting under-represented groups to take part in nature-based activities requires more than physical changes to the environment. Supported activities (such as led walks or a programme of events) are often necessary. Factors that encourage sustained participation in interventions so that full benefits are realised include an enthusiastic and competent project officer to make the necessary linkages between partner organisations and health professionals, and ensuring that staff remain consistent throughout the project.

Conclusions

The review summarised in this report aimed to synthesise evidence in order to understand the contemporary policy focus on behaviour and behaviour change and to identify important insights and key areas of interest for the forestry sector. It highlights that behaviour change is currently a key dimension of many governmental policies across a range of departments. Key policy areas with a focus on behaviour change include the environment, energy, transport and health.

The review of behavioural theory highlights a number of key factors for consideration by policy makers and those involved in the delivery of behavioural interventions. In particular, there is considerable tension between conceptualising behaviour as a consequence of individual decisions or as a product of social contexts, technology, or interactions between these. However, both these conceptual frameworks offer potentially useful insights for those designing interventions to promote sustainable behaviours.

The review of evaluations of interventions provides a number of key points of critical appraisal and reflection that can be used to inform thinking about the focus and design of behaviour change interventions, as well as some key points of orientation for future evaluative research. The evidence suggests that **the most successful interventions are those that:**

1. are based on a good understanding of individual's and groups' values, motivations, and perceptions,
2. target the wider social environment of individuals,
3. adopt a multi-faceted approach, and,
4. facilitate active involvement by participants in project design and delivery.

The review also identifies a number of significant gaps in knowledge and understanding. The review of policy literature identifies a lack of understanding of how messages from government and public institutions impact on people's willingness to take action on issues such as sustainability. The role of government, organisations and partnerships in providing leadership to enable changes in social practices needs to be explored further, as does the role of community deliberation in creating new collective ideas and solutions focused on sustainable lifestyles. Many of the studies included in our review of evaluations highlight the need for evaluations to identify causal factors. Whilst rare, evaluations which do establish causality enable improvements in the design and delivery of interventions because they are able to identify and explain particular success and failure factors. Commentators also highlight a lack of evidence relating to the long-term outcomes of behavioural interventions, calling for longitudinal studies. Looking at the long-term impacts would allow the focus of analysis to broaden beyond changes in behaviour themselves and to consider the 'downstream' impacts of behaviour change. Positive changes in environmental impact brought about by the adoption of pro-environmental behaviours are a good example of this.