

Promoting Pro-Environmental Behaviour: Existing Evidence to Inform Better Policy-Making

Chapter 2: Policy Instruments

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Defra has commissioned and funded this study, but the views expressed in the report do not necessarily reflect Defra policy.

Executive Summary

This chapter provides a conceptual and practical review of the policy instruments available to decision-makers looking to achieve pro-environmental change, comprising a detailed exploration of interventions that relate to Defra's priority areas for Environmental Leadership. The key attributes of the different core policy delivery mechanisms and the conceptual attributes of each are discussed, before specific policies are analysed as examples of these approaches. The review suggests that there are some lessons that policy-makers can draw from past experience. They are as follows:

1. Policies for pro-environmental behaviour change need to pull in one direction and convey a consistent message to target audiences and the public in general if they are to achieve success. This consistency needs to apply across Defra policies and with those coming from the EU, and (possibly more importantly) to those being developed by other departments;
2. Policy instruments appear to be most effective when they simultaneously tackle several aspects of behaviour at multiple levels (individual, organisational, societal). This suggests that it is rarely appropriate to use a solely economic, regulatory, social/voluntary or 'other' approach. Policy-makers will usually need to develop 'packages' of measures to tackle the 'whole system' of behaviour. Defra must work collaboratively with other departments to achieve the level of policy integration that will be required to achieve visible and sustained improvements to environmental outcomes;
3. Policies appear to be more effective when they take a participatory approach with both delivery agencies and end users during their formulation, implementation and evaluation. Negotiating the shape and intention of a policy (and how it can best be monitored and evaluated) with target audiences helps to build legitimacy and raises the chance of its success;
4. To be effective, policy measures usually need to be highly context specific. Devolving responsibility for policy development and delivery to locally accountable bodies (local authorities, business and industry, the voluntary sector and community groups) generally can help to ensure their local suitability and can also help build legitimacy. Care should be taken to ensure that the relevant skills, resources and capacities are available within these organisations to take on these additional duties;
5. Policy-making appears to be more effective where there is a genuine reflexive learning process between Government, consumers and producers. Target audiences are more likely to adapt their practices in the interests of seeing a policy work when they have been involved in its formulation;
6. Points 3 –5 suggest that policies will be more effective when Government provides the overarching strategy for change and identifies headline targets and milestones and then devolves as much responsibility for policy design and implementation to organisations that are closest to the end behaviour they are intended to affect;
7. There is a value in Government having 'first-mover' advantage on policies by setting an example to other statutory bodies, the private and voluntary sectors and taking the lead on policies before other countries adopt such practices. Taking the initiative with a policy allows the target audience to adapt to a new policy measure before it is implemented at a European or international level. This is particularly salient for industry and businesses who wish to

remain competitive. Local authorities and other organisations are willing to follow the Government's lead where the guidance is clear and the value of doing so obvious.

It should be noted that the policy review for this study has been limited in both depth and scope: it has selected a small sample of fourteen randomly selected policy instruments and attempted to qualitatively assess their effectiveness. These individual instruments often form part of a wider programme of delivery, which this study has not been able or required to assess. Our assessments have been based on the available evidence from two key sources: published and internal evaluation reports and the views of policy officers who have been observers of the delivery of these programmes. The study can, therefore, offer only a partial and subjective evaluation of the success of these policies and should in no way be taken to be representative of the wider picture.

1. Introduction

This report presents the findings of the second part of a three-part study for Defra. The study involved a review of the available evidence for better policy-making to encourage pro-environmental behaviours. Informed by complementary analysis of theories and models of pro-environmental behaviour change, this second part of the study evaluated fourteen existing policies for pro-environmental behaviour change. The third part of the study reviewed fourteen ‘real world’ initiatives that aim to influence environmental behaviours either within households, organisations or ‘whole systems’, and has also informed this policy review.

In recognition that Defra’s policy activities in the area of pro-environmental behaviour change are wide-ranging, it was agreed at an early stage of the study that the principal focus of this review should be in relation to seven key behaviour domains, namely:

1. helping businesses produce more sustainably (farmers, food industry and wider industry);
2. encouraging sustainable consumer behaviour (purchasing);
3. encouraging sustainable resource use within the home and by businesses (design, energy, water, etc.);
4. tackling the waste challenge (reduce, reuse, recycle by households and businesses);
5. encouraging sustainable behaviour for different sections of society (e.g. the young);
6. helping farmers (and fishers) become more sustainable land (marine) managers; and
7. sustainable procurement - using Government purchasing to influence markets.

It was also agreed that for a policy to be included within the review it needed to have been operational for a sufficient period to be effective and for some evaluation of its performance to have been undertaken. It was also necessary for policies to be recent enough to secure additional qualitative observations of their performance by policy officers responsible for their implementation and delivery. This suggested an implementation timescale of approximately ten years, from circa 1993/4 to circa 2003/4.

What has become increasingly clear over this ten-year period is that, across all areas of delivery, policies have become increasingly sophisticated and multi-faceted. There is also a far greater tendency for policy development to be guided by a supporting evidence-base and informed by consultations with target audiences and key delivery stakeholders. This is largely in response to Government’s recognition that many of the problems it now faces, such as social exclusion, climate change, social cohesion, etc., are persistent, habituated and highly intractable.

There is general recognition amongst policy-makers that the Government is going to have to involve and educate both the public and delivery agencies if it is to achieve significant outcomes in terms of its policy performance. There also appears to be acceptance, at least amongst some policy circles, that policy responses need to be cross-departmental, holistic and well-integrated at all levels of the delivery chain to tackle these issues effectively.

With these observations to the fore, our evaluations aimed not only to consider policy-performance against stated policy aims, but to also consider policy outcomes against high-level targets and objectives for environmental improvement, as set out in the UK Sustainable Development Strategy (HM Government, 2005).

1.1 Typologies of policy instruments

For ease of analysis, the fourteen policy instruments under review were grouped into four categories, namely:

1. **economic** – policies that change prices/costs or budgets;
2. **regulatory** – policies that set restrictions on activities;
3. **social/voluntary** – policies that provide information, education and/or advice; and
4. **other** – policies that directly provide infrastructure or aim to stimulate technological innovation.

This typology is based on that recommended by the OECD (2000). Policies are categorized according to the main levers and mechanisms they employ. It will be seen from the review that, in practice, many policies use levers that fall into more than one of these categories.

Clearly, alternative categorizations can be used. For example, Demos/Green Alliance (2003) identifies as the key policy groupings:

- legislation;
- economic instruments;
- provision of information;
- marketing; and
- influencing strategies.

ChangeLAB (Dracup-Jones, 2005) have also developed a typology, outlining:

- penalty/reward (e.g. road pricing, green cards);
- infrastructure (providing facilities/structures to make it easier for people to act e.g. provision of cycle paths);
- education/awareness (providing information to enable people to make a more informed choice); and
- social learning/social incentive (creating a community approach).

Ledbury *et al.* (2006) have recently completed a report for the Home Office. This identifies five main categories of policy instrument:

- information, education and advice;
- direct intervention;
- economic instruments;
- regulation and other legislation; and
- self-regulation.

It is clear that expressing categories in different ways will tend to place greater emphasis on different aspects of the instrument's design and intention (for examples its levers, or the delivery process, or the agencies involved) and there are merits in considering the different attributes of instruments in all these ways.

There are a number of other important considerations when undertaking evaluations of policy performance of this kind. Whether policies represent value for money, the distribution and equity of their outcomes, whether they have created any unexpected distortions or side effects and whether they represent true additionality are all important factors in such assessments. Our review aimed to report on these factors wherever this information was available.

1.2 Structure of the report

The remainder of this report is structured as follows:

Section 2 describes the different policy instruments under the four OECD groupings in more detail, including the strengths and weaknesses of each instrument.

Section 3 briefly describes each of the fourteen policy instruments and lists them according to their OECD grouping, pro-environmental target audience and intended level of change, i.e. individual/household, organisational or whole system change.

Section 4 evaluates each policy according to the pre-specified evaluation criteria as described in Annex 1.

Section 5 draws conclusions and identifies some over-arching lessons for future policy-making on the basis of these evaluations.

Annex 2 provides a description of methods and full summary evaluations for each of the fourteen policy instruments.

2. Policy instruments

The following section summaries the four key types of policy instrument as described by the OECD typology (2000). The categories are not designed to be exclusive in that an instrument may (and most often will) combine several levers to affect behaviours. Many of these instruments are also interdependent, for example legislation is needed to set taxes, regulation to ensure the disclosure of information, etc. This section does not set out to exhaustively review the instruments but provides some key exemplars as relating to environmental behaviour change.

2.1 Economic instruments

Economic instruments describe a broad set of fiscal interventions including taxes and charges, subsidies and incentives; tradable permits and quotas; awards, licences and franchises and loans, guarantees and insurances. They can be used to encourage pro-environmental behaviour (e.g. subsidies and tax credits) or to discourage behaviour that is environmentally harmful (e.g. quotas and taxes). Generally speaking economic instruments are used to introduce price signals to consumers and producers and to act as a reminder of the external costs and benefits of goods and/or activities (OECD, 2002: 95).

Table 1 describes the main types of economic instrument that are generally available to Government. Some of these instruments are however more appropriate to pro-environmental behaviour change than others and the following sections discuss this specific angle in more detail.

Table 1: Variants of economic instruments

Variant	Description	Examples
Taxes	The Government raises the price paid by the consumer or costs faced by industry	<ul style="list-style-type: none"> ▪ Fuel duty ▪ Congestion charge
Charges	Government charges for services that are consumed	<ul style="list-style-type: none"> ▪ Policing at football matches
Subsidies, tax credits and vouchers	The Government reduces the price paid by the consumer or the costs faced by industry	<ul style="list-style-type: none"> ▪ Pre-school education voucher ▪ R&D tax credits
Benefits and grants	Similar to subsidies but often used when the emphasis is on who receives the subsidy rather than the goods/services that are being promoted (grants and benefits can be ring-fenced or can be use for any expenditure)	<ul style="list-style-type: none"> ▪ Education maintenance allowances ▪ Incapacity benefit ▪ Warm Front Scheme (Home Energy Efficiency Grant)
Tradable permits and quotas	Systems under which a right to produce a good/service (or by-product) is created and a market is created to allow companies to buy or sell these rights	<ul style="list-style-type: none"> ▪ Carbon emissions trading scheme
Award and auctioning of franchises and licenses	System under which the right to produce a good/service is sold	<ul style="list-style-type: none"> ▪ Radio spectrum of mobile phones ▪ Airport landing slots
Government loans, loan guarantees and insurance	Government directly provides loans and/or provides a subsidy for the loan (e.g. through guarantees or	<ul style="list-style-type: none"> ▪ Student loans ▪ Export credit guarantee

Source: Ledbury *et al.* (2006: 12)

2.1.1 Environmental taxes and charges

Environmental taxes aim to make individuals or businesses pay for the negative externalities of their activities by including the wider cost of this in the purchase price of goods and services. This way, it is left to the purchaser to decide whether the benefits they receive from the product are worth the ‘correct’ adjusted price.

Taxes are most efficient when the wider costs of an activity are known and they can be applied directly on the externalities of that activity or as close to them as possible. This ensures that the purchaser is made directly aware of the link between their behaviour and the tax. Ekins and Dresner (2004) group environmental taxes and charges into upstream charges (e.g. on environmental emissions) and downstream charges (e.g. on households or consumers) (2004: 1).

Environmental charges differ from taxation in that they are usually used to reflect the tangible fixed cost of a single action or activity. For example, the Central London Congestion Charge is payable each time that activity occurs (entering London by car). In this way, they can offer more direct signals to producers and consumers about the impact of their behaviour.

Green Tax reform has been identified as a potential alternative to more traditional taxation. It aims to shift the tax burden from labour to energy; the Climate Change Levy (CCL) provides one example of this. CCL is a tax on industrial and commercial energy, the revenues of which contribute towards a reduction in national insurance contributions for employers (Dresner, 2002). Another example of a more environmental approach to taxation is ‘rising block’ price tariffs, which aim to reconcile affordability with effective price signals. The initial ‘bare necessity’ units of consumption remain cheap, with the price increasing as consumption rises. Several authorities around the world have used this approach for energy and water use (Sohail, 2004, cited in Levett and Therival, 2005).

Advantages

One of the key advantages of taxes and charges from a policy perspective is that they influence people’s buying power, whilst still allowing them the ultimate decision about what, when and how much to consume. They can be used to influence the uptake of goods or services. They allow the internalisation of environmental externalities, are in keeping with the polluter pays principle (HM Treasury, 2002:25), and provide direct financial incentives for more environmentally conserving behaviour (Ekins and Dresner, 2004: 1). The implementation and enforcement of economic instruments is generally seen as less demanding, and thus more cost-efficient and less intrusive on the decision-making process, than regulatory instruments (OECD, 2002: 95).

Taxes and charges are most efficient when the external cost of an activity can be accurately estimated by policy-makers and when the tax or charge can be applied close to the activity it aims to affect. Behaviour change will depend on how sensitive and responsive individuals and firms are to increased prices; i.e. the price elasticity of demand. It will also be affected by the ratio of the price increase to the overall cost of the product or activity.

Disadvantages/risks

Although taxes are often seen by policy-makers as the most efficient way of changing behaviours, in practice they often fail to have this effect, especially when the tax is only a small part of the total cost of the product or activity. People may choose to absorb the additional cost and continue in their present behaviour. It is often in the interests of businesses to lower prices in order to compensate the cost of environmental externalities, thus nullifying the internalisation of an environmental externality. The OECD (2000) offers the example of tourist packages that include the cost to the consumer of a carbon tax on aviation fuel, but reduce costs elsewhere in the package, removing any consumer incentive to travel more sustainably.

Even when the rise in production costs is passed on to consumers, the desired change in producer behaviour does not always follow. In a recent study of Small and Medium-sized Enterprises (SMEs) (specifically restaurateurs and the construction industry), Revell and Blackburn (2004) found that taxes to encourage more environmentally friendly practices were more likely to lead to increases in costs to clients than changes in behaviour.

Taxes and charges are also extremely politically sensitive, as public reaction to numerous previous attempts to internalise the environmental cost of activities has demonstrated. Public hostility to the fuel duty escalator in the UK is one example of this. For this reason, policy-makers need to be very clear in their justifications of such charges and the level of charge that is imposed. Often a charge that is politically acceptable will be insufficient to provoke significant behaviour change.

In terms of the climate change levy, opposition from industry (in particular energy-intensive industries) has demonstrated scepticism about the potential savings in the cost of labour. Moreover, although higher taxes on energy use can be used to incentivise technological innovation, it is difficult to assess the point at which they lead to distortions in the market (Dresner, 2002).

Another criticism of environmental taxes and charges is their propensity to have a negative effect on competitiveness, and their potentially regressive nature (Ekins and Dresner, 2004). Issues of equity need not be an automatic veto, however, as inequitable distributional impacts can be mitigated by other differential tariffs and compensatory measures (UKRTSD, 2000).

2.1.2 Subsidies and grants

Environmental subsidies can be used in a similar way as taxes to reward individuals or businesses for their pro-environmental behaviour or to promote more environmentally sound processes and products. A subsidy can be applied to a product or activity to reduce its cost and thus encourage customers to switch to less environmentally damaging goods and services. Subsidies can also be paid to the manufacturer of a product or activity provider to influence the production processes towards more environmentally sound practices. Policy-makers can also act to remove existing (often hidden) subsidies on activities that are environmentally harmful, although this is often subject to severe lobbying pressure from producers (Tietenberg, 2004). Grants are a variant of subsidies, but usually take the form of a fixed amount to promote a specific action or outcome.

Advantages

Subsidies and grants are a way for Government to reward positive behaviour and are, thus, generally far more popular with the public than taxes and charges. They are a useful way of raising awareness of the need for behaviour change amongst a given market sector and for pump-priming new activities. If properly targeted, they are (at best) a short-term solution to market failure / distortions and distributional / social equity issues.

Disadvantages/risks

Although subsidies can be used to reduce negative externalities in the short-term, they will not lead to efficient reorganisation of the market over time because they create distortions in investment and consumption. In his report for the Home Office, Miller (2005) advises that the effectiveness of using subsidies will depend on the cross-elasticities of demand and supply¹ and the amount of externality produced by the alternative product. He notes that subsidies are also most often funded through taxation, which also creates distortions in the market.

A key concern for policy-makers when considering the use of subsidies and grants is whether recipients (or at least some recipients) may have acted in the same way without the incentive. For this reason they need careful targeting and testing and their uptake requires close monitoring, making them more costly to administer than taxes. Grants tend to be less efficient than subsidies or taxes because they fail to represent the marginal costs and benefits of activities and distort the market over time.

2.1.3 Tradable permits and quotas

Quotas and permits are a way of restricting an output or a type of pollution. In environmental policy, permits have been used as a way of incentivising companies to achieve reductions in greenhouse gas emissions. Under the UK Emissions Trading Scheme (ETS) participating companies are allocated emissions allowances. Companies can emit in excess of their allocation of allowances by purchasing allowances from the market, allowing for variation in a company's production of CO₂. A company that emits less than its allocation can sell its surplus allowances, creating a financial incentive for cutting emissions (Defra website, 2005). Quotas and permits differ from taxes in that Government sets a quota rather than a levy rate and to affect behaviour change quotas are often incrementally adjusted downwards. The UK ETS provides the only example of this instrument in practice and it is unclear whether it could be replicated for other markets or extended to domestic trading (between households).

Advantages

If properly designed and administered, emissions trading and quota schemes are a highly visible way of sending clear signals to producers about environmental limits and positively affecting the environmental performances of business and industry over time. Decisions about whether to innovate or trade are left to the target audience. To ensure early success, it is vital that schemes are well advertised, targets are set and regulation is in place well before trading begins.

¹ Cross elasticity measures the responsiveness of demand / supply for one good to a given change in the price of a second good.

Disadvantages/risks

In practice, there have been several problems with tradable permit schemes. In the past, companies who demonstrated responsibility for the environmental impact of their practices by investing in emissions reduction before a trading scheme was introduced have effectively been penalised for their good practice through lower allocations, compared to companies who waited to introduce reduction measures (often more cheaply) once the scheme commenced (Levett and Therivel, 2005). This had an impact on the popularity of the scheme and the willingness of some of the more innovative companies to participate.

It is also important to recognise that the introduction of a trading scheme does not, in itself, reduce overall emissions; this depends on the total level of permitted activity and participant compliance. Over time, Government can experience political difficulties as the overall number of permits available in the market is reduced in order to drive continuous reductions in emissions (Levett and Therivel, 2005). To control for this, participating organisations must have sufficient opportunities to achieve reductions through technical innovation and improved efficiencies to avoid seriously jeopardising the competitiveness of their business. Monitoring, reporting and verification procedures can also be burdensome on both companies and regulators.

2.2 Regulatory instruments

Environmental regulations are routinely used to influence business. Regulatory limitations or constraints on both product ownership and use can enable policy-makers to directly influence behaviour change. Due to its intrusive nature and the costs of implementation and enforcement, such direct regulation is relatively rare for the individual consumer. Quantitative restrictions or bans, though also limited in use, are often applied in response to health and safety concerns or when tangibly maintaining or increasing the quality of a product or service (OECD, 2002: 96).

It has been argued by theorists of pro-environmental behaviour change that greater direct regulation might be the only way to change the behaviour of producers and businesses, given the apparent ineffectiveness of voluntary and market-based measures (Revell and Blackburn, 2004). Revell and Blackburn arrive at this conclusion with the caveat that if regulation is to be seen as a level playing field for enterprises, and not seen as a threat to competitiveness, then robust enforcement of policy instruments is key (Revell and Blackburn, 2004).

Rather than direct regulation, policy-makers may choose to encourage self-regulatory activities, for example, by the use of codes of conduct, minimum standards or voluntary agreements that individuals or organisations agree to abide by.

Table 2 describes the range of regulatory instruments that are available to policy-makers.

Table 2: Variants of regulatory and legislative instruments

Variant	Description	Examples
Price and market structure regulation	Laws or rules that: i) set out the prices companies can charge for particular goods/services; ii) set out how companies can organise themselves and their relation with other companies	<ul style="list-style-type: none">▪ Rail fare regulation▪ Competition laws

Production and consumption regulation	Laws or rules relating to how products are produced – these can cover: characteristics of product/service, how the product/service is produced, who can produce a product/service etc.	<ul style="list-style-type: none"> ▪ Planning rules ▪ Compulsory motor insurance ▪ Licensing laws
Standards setting regulation	Rules which set minima/maxima for particular characteristics of goods/services and production techniques	<ul style="list-style-type: none"> ▪ Trading standards ▪ Health and safety
Prescription and prohibition legislation	Rules which state what an agent must/must not do	<ul style="list-style-type: none"> ▪ Criminal acts ▪ Banning tobacco advertising
Rights and representation legislation	Rules which provide agents with rights and/or representation	<ul style="list-style-type: none"> ▪ Human rights legislation
Codes of practice	Codes of practice are similar to voluntary agreements in that they are agreed within communities (usually industries) – codes of practice tend to be consumer focused (are presented to consumers) and can be certified by the Office of Fair Trading	<ul style="list-style-type: none"> ▪ Banking code
Co-regulation	Between the extremes of voluntary agreement and regulation there are points in between – Co-regulation is voluntary codes of practice with significant Government involvement (statutory backing)	<ul style="list-style-type: none"> ▪ Advertising Standards Agency ▪ HSE Approved Codes of Practice ▪ Soil Code
Voluntary agreements	These are rules (not backed up by regulation) which a community (industry, area) agrees to abide by – often there are no formal sanctions	<ul style="list-style-type: none"> ▪ Advertising standards ▪ Corporate Social Responsibility initiatives

Source: Lebury *et al.* (2006: 13)

Howes (2005) classifies the regulatory instruments specifically designed to target environmental behaviour into four different types, as follows:

1. A complete ban on a product or activity when their associated risks are deemed too high, (for example the ban on products that used CFC gases or the European Union's recent restrictions on GM food)
2. Specifying appropriate technology to be used in either the production or use of a product (for example catalytic converters on exhaust pipes)
3. Setting standards or licensing conditions (such as upper thresholds for smoke emissions or quotas for fishing)
4. Creating an 'ambient environmental standard' for an area (Howes gives the example of setting a limit on the average concentration of airborne Sulphur Dioxide in a particular air-shed) (Howes, 2005: 70).

2.2.1 A Complete Ban on a Product or Activity

Banning a product or activity is one of the more stringent forms of direct regulation. A ban is used when a decision-maker can see no alternative, when the level of risk is simply too high. This level of unacceptable risk gives the action legitimacy, despite the potential negative economic impacts it will have (Howes, 2005). Policy-makers, however, are often less concerned about the consequences of applying bans, with the view that technological innovation will create new practices and technology that will replace damaging products (Dryzek, 1997), the ban on CFCs providing one example (Benedick, 1998). Conversely, a ban may find legitimacy from the precautionary principle, as was the case with the European Union restrictions on genetically modified food and its evident public support.

Advantages

Howes notes the importance of a positive institutional context when employing this type of regulation. Stakeholder involvement and consensus-building is one example of creating such a positive context and is consistent with the 'action-learning' approach recommended by theories of pro-environmental behaviour change.

Disadvantages/risks

A lack of knowledge, adequate testing facilities and the difficulty of assessing the risk of a particular product or ban are the main barriers to adopting such a policy tool. The lack of definitive scientific knowledge on the use of asbestos in construction, coupled with a laissez-faire approach, led to the delay of a ban on the harmful substance in both the US and the UK (Howes, 2005). Often the institutions and policy frameworks that decision-makers work within are inadequate to create the necessary consensus (Beck, 1992; Foucault, 1977; Redclift, 1997).

Conversely, a lack of definitive scientific knowledge on genetically modified food and the difficulty of assessing the risks involved with the new technology, coupled with conflicting interests and opinions from consumers, producers and stakeholders, led to restrictions in the European Union, despite widespread use of such products in the US.

2.2.2 Specifying Appropriate Technology

The specification of appropriate technology is another form of direct regulation available to policy-makers. This allows Government to influence the production process, in line with thinking on administrative rationalism (Dryzek, 1997), and fits more comfortably with finding technological solutions to environmental problems. The requirement in many OECD countries for all new vehicle engines to run on unleaded petrol is one example.

Advantages

There have clearly been past success stories in specifying technology, such as unleaded fuel or catalytic converters and their direct effect on the emission levels of airborne pollutants. Nevertheless, adopting such regulation will always run the risk of achieving seemingly positive results at the expense of the best possible solution. There is also the risk that regulation might target the wrong source or the least appropriate stage of the production chain, or misdirect efforts at tackling an environmental issue (Howes, 2005).

Disadvantages/risks

Such a policy instrument can reduce the incentive to continually innovate (Howes, 2005). This type of top-down policy also leaves little room for devolved organisations to adopt more suitable strategies (NAPA, 1995), and reduces the onus on industry to constantly pursue cleaner production methods.

2.2.3 Setting standards or licensing conditions

Setting standards is more adaptable than either technological specification or imposing total bans on products or activities. Policy-makers can be flexible in targeting both the scale and type of externality. In the case of environmental pollutants upper limits can be set for a set of pollutants, a single type of pollutant, or different forms of a pollutant, and can be applied to various spatial scales from a single chimney to an entire country (Howes, 2005).

Advantages

Industry has considerable flexibility in how to meet the performance standards set (Howes, 2005). The process of setting standards can be applied to other environmental policy areas in the form of quotas. Where there is a considerable difference in the energy consumption of appliances, a process of ‘tail lopping’ could be introduced, where the minimum standard of energy efficiency could be raised continually over a period of time to exclude the worst performing products (Levett and Therivel, 2005). Performance standards could also be applied to absolute levels of energy consumption, as well as relative levels between appliances, in order to achieve absolute reductions in energy consumption (Levett and Therivel, 2005).

Disadvantages /risks

Monitoring standards and administering licenses takes considerable resources to enforce (Howes, 2005). There can be high levels of non-compliance and malpractice, particularly where target audiences consider quotas and standards to be unjust or poorly distributed.

2.2.4 Creating an ‘Ambient Environmental Standard’

Creating an ambient standard for an area is the most flexible of the four types of regulatory instruments examined here. Ambient standards require that a particular geographical area must not fall below a certain level of environmental standards. The authority for that area is able to make trade-offs between different sources of pollution in order to meet these standards (Howes, 2005). More upstream standards and requirements, such as efficiency standards, minimum product standards, product labelling and building regulations, have proven to be most popular with target audiences (OECD, 2002: 96).

Advantages

Due to their greater local accountability, area-based initiatives can often lend more legitimacy to a regulatory instrument than an equivalent directive coming from a statutory body. The case study of the Marine Stewardship Council, where Government is accepting the non-governmental organisation’s certification scheme as a legitimate equivalent of their own standards, is one example of this.

Disadvantages/risks

Policy-makers must decide on an acceptable level of exploitation or externality before enforcing the policy. There are also inherent risks involved when making trade-offs between pollution sources, while significant hazards might not be included in this process in the first place (Howes, 2005). As with emissions standards, ambient standards have proved difficult to enforce. There is also the issue of who enforces, with overlapping levels of political jurisdiction. With the Air Quality Strategy 2000 local authorities are required to formulate and implement action plans in order to meet standards set at the national level (Beattie, Longhurst and Woodfield, 2002). There is a danger that at each level the ‘handing down’ of standards is exposed to differing levels of political will (Howes, 2005).

2.3 Social/Voluntary instruments

In the OECD typology, social/voluntary instruments describe policies that are designed to influence consumer and producer knowledge and, in turn, consumer and producer willingness to behave pro-environmentally. Governments and businesses act as ‘editors’ of the choices available to consumers (Steedman, 2005: 2). Information dissemination, public awareness campaigns, voluntary initiatives, labelling schemes (as opposed to regulation on labelling schemes), open forum debate and discussion and participatory decision-making fora all constitute social or voluntary instruments (OECD, 2002: 96).

Table 3 identifies the different ways in which policy-makers can inform the wider public.

Table 3: Variants of information, education and advice

Variant	Description	Examples
Provision of information	Information is provided to the public	<ul style="list-style-type: none">▪ School league tables▪ Crime statistics
Public education campaign	These are often used to raise awareness of particular issues and present basic information	<ul style="list-style-type: none">▪ Safer sex campaigns▪ Crime reduction campaigns▪ Recycling campaigns
Reporting and disclosure requirements	Government imposes regulations which require agents to provide information – these regulations may cover issues about the information including frequency and detail	<ul style="list-style-type: none">▪ Company accounts▪ FOI
Labelling	This is similar to reporting and disclosure requirements – manufacturers are required to state information on products in a particular format	<ul style="list-style-type: none">▪ Nutritional information on food▪ Energy labels on fridges
Advisory service	An expert provides information and advice to a person or business	<ul style="list-style-type: none">▪ Connexions (advice for young people)▪ Citizens Advice Bureau▪ NHS direct
Representation service	An expert is appointed to act on behalf of a person or business	<ul style="list-style-type: none">▪ Ombudsman

Source: Miller (2005: 11)

2.3.1 Information dissemination and public awareness campaigns

Governments regularly participate in information dissemination and awareness raising activities on a whole variety of topics, mostly concerned with public health and safety. While there is evidence to suggest that some of the more successful campaigns have raised public

awareness about a given issue, it is unclear whether such campaigns lead to any direct changes in actual behaviour. Nevertheless, public awareness-raising is clearly a necessary policy instrument as part of a package of measures to encourage pro-environmental behaviour change.

Campaigns can take a variety of forms and be delivered through a number of different media (newsletters, fact sheets, the Press, radio and television advertising, the Internet, etc.). The form and method for delivering a campaign should be matched to the needs and behaviours of the target audiences. Policy-makers should also consider the appropriateness of the message in relation to who is delivering it; people can be suspicious of information coming from certain sources, e.g. science or industry.

Consumers are more likely to seek out information on topics that are well publicised, offer clear and simple messages, have clear tangible benefits and present few practical barriers to consumer action. Many of those people who regularly seek out information on how to live a more sustainable life-style prefer to do so via the Internet, though people who are initially less likely to seek out information are also less likely to have access to the Internet (Steedman, 2005).

A recent study on domestic energy use for Ofgem asked what sort of information (and in what format) would best help inform and change the behaviour of consumers (Roberts and Baker, 2003). The study found that consumers responded to historical comparison information, both on their bills and meters, that graphic representation of their energy use compared to other groups of households was effective, and that the information needed to be immediate and up-to-date. The research also showed that engaging consumers in the design and presentation of the information to be fed back increased the likelihood of the information having an impact. Information was also more effective when complemented by educational campaigns and Government support.

A research study of over 1,800 people by the National Consumer Council (NCC) found that information on sustainable consumption and ways to live a more sustainable lifestyle was welcomed by consumers. Television and newspapers were the most common sources of information, followed by local authorities and shops or supermarkets. Expert bodies set up by the Government to provide information and advice, such as the Energy Savings Trust (EST) and its Energy Efficiency Advice Centres were amongst the least popular sources (Steedman, 2005). When asked the question '*where would you prefer to receive information from?*' traditional media were not as popular as might be expected. Consumers' preferences were for more authoritative, impartial and trusted sources such as consumer watchdogs.

The supermarket was also a popular choice, suggesting consumers were keen to fit information gathering on leading a more sustainable lifestyle into their daily routines (Steedman, 2005). Leaflets and brochures were well used by information-seekers (34%) alongside the internet (49%), with other media sources less popular (newspapers 29%, magazines and television 22% each). Advice is also sourced by 25% of seekers over the telephone. 24% of consumers mentioned product labels and information supplied with the product; particularly women (Steedman, 2005).

Advantages

Information campaigns can be an effective way of targeting and informing consumers. A range of 'vehicles' such as supermarkets, the media or household bills can be used to inform

the target audience of the positive and negative effects of their lifestyle, providing this information as part of their daily routine.

Disadvantages/risks

Information campaigns can run the risk of wrongly assuming that all that prevents people from changing their behaviours is a lack of understanding about the nature of the problem or how to change their behaviour. In many instances this is not the case, as our review of theories of behaviour change has demonstrated. In practice, there are likely to be numerous physical and social barriers to change including lack of facilities and infrastructure, habitual and normalised patterns of activity and financial constraints. Policy-makers should take care to ensure that they do not undermine the impact of campaigns and, ultimately, the whole imperative for pro-environmental behaviour by exhorting people to change where there is no possibility of them being able to do so due to other prevailing forces and/or perverse incentives. Demos has cautioned against this:

“Information does not necessarily lead to increased awareness, and increased awareness does not necessarily lead to action. Information provision, whether through advertisements, leaflets or labeling, must be backed up by other approaches.”

(Demos / Green Alliance, 2003: 46)

There is also very little information available on the cost-effectiveness of campaigns. Even measures aimed at a specific behaviour change, such as dropping litter, are difficult to monitor and evaluate given the number of potential external factors. Information campaigns also run the risk of inducing information overload (Jackson, 2005).

The National Consumer Council has identified that consumers from disadvantaged backgrounds are less able to make sustainable choices, lacking the income to invest in more sustainable products. The research showed that lower-income consumers and young people were less likely to have come across information on steps they could take to make their lifestyles more environmentally friendly. The research concluded that people on low-incomes are most likely to benefit from personal contact with an advisor, given they are more likely to be coping with a complex range of more pressing problems.

2.3.2 Labelling schemes

In the context of a global economy, the production and consumption process is often separated, leaving the consumer with little information on the environmental impact of a particular product. Eco-labelling is one way of countering this trend, enabling consumers to make informed decisions and encouraging manufacturers to produce less environmentally damaging products (WWF/SEI, 2005). Levett and Therivel, in a report for the Local Government Association, suggest mandatory information on the ecological footprint of a product (Levett and Therivel, 2005), though such an approach would be equally susceptible to the disadvantages of labelling schemes laid out below.

The Advisory Committee on Consumer Products and the Environment (ACCPE) suggested to the Government an A-G labelling scheme to accompany starter packs for properties, as well as a similar scheme for cars, introducing a comparative scheme similar to that of the Netherlands (ACCPE, 2002). The Committee noted the importance of ensuring data availability:

“Reducing the impacts of consumer products depends on effective influence over actions taken in the supply chain. A vital element in this is ensuring that all the relevant players – from designers, manufacturers, and retailers through to the end consumer – have, and use, the information on which they can act”

(ACCPE, 2002: 31).

Advantages

One of the strength of this type of intervention is that consumers are able to make informed decisions and purchase different products, without significantly altering their lifestyle (WWF/SEI, 2005).

Disadvantages/risks

Eco-labelling has its limits as an instrument for influencing changes in consumer behaviour. It does not encourage individuals to seriously reassess their lifestyles or wider behaviours or to reduce their overall consumption. There are also issues with equality of access to pro-environmental goods, which often come with an ‘environmental premium’ and so are often only a realistic purchasing option for people with higher disposable incomes.

ACCPE has advised that there are misleading ‘factual’ claims with labelling and misleading ‘general’ claims where claims might be more qualitative and not accountable to sector-specific standards (ACCPE, 2002). The Committee has also highlighted two continual problems with individual producer labels. Firstly, an insufficient number of companies offer, or are motivated to offer any environmental information about their products. Secondly, when claims are made they are often unhelpful, misleading or confusing, undermining the genuine attempts of responsible producers (ACCPE, 2002).

2.3.3 Participatory methods

There are both vertical and horizontal considerations to be made when developing participatory mechanisms. Vertically, a key question is whether to address an issue at the local, regional, national or global level. Horizontally, the amount of responsibility conveyed to a decision-making process and considerations about which part of a production/consumption supply-chain to be addressed make transferable lessons difficult to reach (OECD, 2002: 109).

Advantages

When effective, participatory decision-making can ensure an emphasis on coherent policy formulation, based on collective interests and long-term solutions (OECD, 2002: 109). It has been argued that public debate and consultation (establishing consensus and public awareness on policies aimed at promoting behaviour change) adds legitimacy to policy interventions (Halpern and Bates, 2004: 63). It is also felt that allowing the public to have a role helps combat confusion, another cause of mistrust (Holdsworth and Steedman, 2005).

Disadvantages/risks

It is important to consider the public as a myriad of different groups and people, not just one entity called the ‘public’ (GECP, 2000). There is also a risk with participatory methods that certain groups within society can hijack the debate, leaving other more marginalised groups out of the decision making process and giving a false impression of ‘public’ attitudes and

concerns (REF). It is also important to ensure that participatory decision-making fora are not simply designed for resolving conflicts or reaching compromises, but also used as mechanisms for social learning (Gregory 2000 and OECD 2001).

While the formulation, implementation and enforcement of policy will be greatly improved by the involvement of consumers, producers and stakeholders, Governments continue to hold the ‘ultimate stewardship responsibility’ for facilitating such dialogue and involvement (OECD, 2002: 109). However, participatory methods should only be used if policy-makers are genuinely prepared to listen / respond. There are obvious time-management issues in relation to the use of more inclusive, deliberative and participative methods and, as such, they will rarely be appropriate when dealing with crisis situations.

2.4 Other (infrastructure, indicators and targets) instruments

Policy tools that fall under the ‘other’ OECD grouping include state of environment assessment and goal setting, development of indicators, incentives for environmentally superior technological innovation and diffusion, and infrastructure provision.

Table 4 lists the main instruments falling within this category.

Table 4: Variants of other instruments

VARIANT	DESCRIPTION	EXAMPLES
Goal setting and guidance	The Government in consultation with key stakeholders undertakes an evaluation of the current state of the environment against future targets and sets appropriate goals and targets for behaviour change with supporting guidance	<ul style="list-style-type: none"> ▪ UK SD Strategy ▪ Planning guidance notes
Provision of infrastructure	This can be either direct provision or via a devolved agency	<ul style="list-style-type: none"> ▪ Jubilee Line Extension ▪ Door-step recycling facilities
Use of indicators	Measurement of performance against objectives and target outcomes at any level of policy delivery	<ul style="list-style-type: none"> ▪ UK SD Strategy ▪ Local authority PSAs ▪ Quality of Life Indicators
Incentives for innovation	These usually take the form of subsidies and grants (as described in Table 1)	<ul style="list-style-type: none"> ▪ See Table 1

2.4.1 Goal setting and guidance

Policy-makers can (and already do) use a variety of goal or target setting activities and offer guidance to encourage the voluntary uptake of pro-environmental behaviour. This is likely to be most effective where those undertaking a given activity are dependent on the opinion or decisions of others, for example, as developers are dependent on the decisions of land use planners, or producers are reliant on consumers’ perceptions.

Advantages

Clear goals and guidance from Government provide a framework for activity where there is willingness for compliance. It is most successful where there is some further incentive or regulation to support pro-environmental behaviour.

Disadvantages/risks

As with all voluntary instruments, target audiences must see an advantage from their uptake.

2.4.2 Provision of infrastructure

Lack of physical provision of facilities is one of the most frequently cited barriers to behaviour change by both individuals and organisations. Government can choose to directly fund new infrastructure projects, such as public transport services or recycling facilities or can encourage other bodies or the private sector to provide them through fiscal incentives or regulation.

Advantages

Government provision of infrastructure sends a direct signal of commitment to a product or activity and can serve to catalyse the behaviours of others. It is also consistent with the 'leading by example' philosophy of the UK Sustainable Development Strategy (HM Government, 2005).

Disadvantages/risks

The most significant barrier for policy-makers with direct provision is the need to raise the revenue to cover their cost. The public and business are generally adverse to increased taxes etc. Politically, revenue raising activities by either central or local Government may be contentious particularly as there are often insufficient funds available to Government for new infrastructure projects. For large infrastructure projects, Private Finance Initiatives (PFIs) have been seen as one possible way forward in this respect, but have proven to be fraught with problems as both health and transport examples have shown. Contracting out can also result in private sector failure to properly invest, as demonstrated by Railtrack.

Improvements in the provision of infrastructure are also at risk of a 'rebound effect', where reduced consumer costs and increased efficiency also lead to increased consumption (WWF/SEI, 2005). Energy savings from improved home insulation or increased fuel efficiency will encourage residents to keep their homes warmer or motorists to drive more, and though there will be net benefits, the potential energy savings from a scheme or new technology will be undermined (WWF/SEI, 2005).

Another key problem with the provision of infrastructure is ensuring that it is appropriately and effectively placed (i.e. where it is most needed) and taken-up by the target audience. The Warm Front scheme, for example, had difficulty matching up the eligibility criteria for its scheme with the need to combat fuel poverty, with around one third of the fuel poor being ineligible and two thirds of eligible households not being fuel poor (NAO, 2003). Up until 2003 only 14% of grants reached the least energy efficient homes and there was limited targeting of grants to households in greatest need (NAO, 2003). It is also quite problematic to monitor the efficiency of infrastructure provision (WWF/SEI, 2005).

2.4.3 Use of Indicators

Indicators are designed to measure policy or system performance against a set of agreed targets or objectives. They can be quantitative (based on counts) or qualitative (based on attitudes or descriptions). They should be developed alongside policy measures in order to clearly reflect the outcome aims of instruments. Indicator development has proved popular

with policy-makers as a way of expressing their policy intentions to the wider public. Numerous indicator frameworks have been developed for monitoring sustainable development at the global, regional, national and local level. The Government's Headline Indicators provide an example of this.

Advantages

Appropriate, robust, measurable and transparent indicators have considerable power for holding decision-makers to account for their policy performance.

Disadvantages/risks

Once the indicators are effectively communicated and disseminated, other actors, and in particular the Press, can use them as a benchmark of Government performance. Theoretically this puts pressure on the Government to deliver, in practice, this makes little difference if there is no political will to change environmental performance.

2.4.4 Incentives for technological innovation

Most commonly these take the form of either subsidies or grants for research and development to industry (for further discussion of these instruments see 2.1.2)

Having rehearsed the core attributes and advantages and disadvantages of the key policy instruments that are available to policy-makers for influencing environmental behaviour at the individual, organisational level or within whole systems of production, the next section evaluates the actual performance of fourteen existing policy instruments targeted at this outcome. Its key aim is to draw lessons from past policy-making to inform future performance in this respect.

3. Evaluation of existing policies

In order to move beyond theoretical and modelled understandings of pro-environmental change, our study included analysis of fourteen key policy instruments already being targeted at achieving this outcome in the UK. The fourteen were selected on the basis that they constituted a representative sample of the range of interventions across the different types of instrument, type of behaviour, levels of change and target audience. Table 5 lists the fourteen instruments according to these five criteria.

Table 5: Evaluated policy instruments by level of targeted change, OECD grouping and target audience

	Policy Instrument	Pro-Environmental Behaviour Domain	Level	OECD Tool Grouping	Target Audience
1	UK Emissions Trading Scheme	Encouraging sustainable resource use within the home and by businesses	Organisational	Economic	Organisations, mainly businesses
2	CAP Single Payment Scheme - Set-aside	Helping farmers (and fishermen) become more sustainable land (marine) managers	Individual	Economic/regulatory	Farmers
3	The Market Transformation Programme (MTP)	Helping businesses produce more sustainably	Whole System	Regulatory	Businesses
4	The Green Claims Code	Encouraging sustainable consumer behaviour	Organisational	Regulatory	Businesses, and in turn consumers
5	BioWise	Helping businesses produce more sustainably	Organisational	Social/Voluntary	Producers
6	Warm Front	Encouraging sustainable resource use within the home and by businesses	Individual	Economic/Social/Other	Households
7	Energy Efficiency Advice Centres	Encouraging sustainable resource use within the home and by businesses	Individual	Social/Voluntary	Households and Businesses
8	Waste Minimisation and Recycling Fund	Tackling the waste challenge	Individual	Economic/Other	Local Authorities
9	HM Government Sustainable Development Strategy Headline Indicators	Encouraging sustainable behaviour for different sections of society	Whole System	Other	Across the range of stakeholders, consumers, producers and other bodies
10	Environmental Action Fund	Encouraging sustainable	Organisational	Social/Voluntary	Voluntary and Community

		behaviour for different sections of society			Sector Groups
11	England Rural Development Programme (ERDP) – Rural Enterprise Scheme	Helping farmers (and fishermen) become more sustainable land (marine) managers	Individual	Other	Farmers, Foresters and Land Owners
12	Common Fisheries Policy – Total Allowable Catches	Helping farmers (and fishermen) become more sustainable land (marine) managers	Individual	Regulatory	Fishers
13	Public Sector Food Procurement Initiative	Sustainable procurement – using Government purchasing to change markets	Whole System	Social/Voluntary	Business
14	Framework for Sustainable Development in the Government Estate	Sustainable procurement – using Government purchasing to change markets	Organisational	Other	Government

3.1 Evaluation methodology

In his report for the Home Office, Miller (2005) identifies a useful set of broad criteria for evaluating policy options, which has helped to inform our analysis. As a first step, he recommends that policy action can only be justified on the grounds of two higher-level objectives, namely:

- **efficiency** – if there are unexploited opportunities to increase the welfare of society;
- **equity** – to address unequal outcomes within the market.

The report notes that the performance of policies against these objectives can be contradictory (e.g. improving efficiency may reduce equity) and policy-makers may need to make a trade-off between these two overarching goals. Over and above these two key policy aims, the report recommends that policy appraisal should consider the following:

- likely policy effectiveness against objectives – failure to understand the context within which a policy is being introduced, and its impact on behaviour, is likely to lead to ineffective and perverse results;
- cost – those of both Government and third parties and compared with a ‘do nothing’ scenario or the cost of failing to intervene;
- side effects – possibility that the policy will produce or exacerbate a market failure or negatively impact on other areas of policy delivery;
- impact on international competitiveness – the competitiveness of UK firms, particularly small and medium enterprises (SMEs);
- additionality – any impacts resulting from an intervention need to be additional and could not have happened without that intervention; and
- distribution (e.g. geographical and socio-demographical).

The report notes the importance of considering as full a range of policy options as possible. Further practical considerations may limit the available options including:

- legality - in light of not only UK, but also European, international and Human Rights legislation;
- enforceability – if a regulation is in place but there is poor enforcement, it is likely to fail;
- public acceptability – enforcement is more difficult where the public fails to accept an intervention or trust the evidence supporting it;
- capacity – where the capacity to deliver is in question due to lack of resources or skills, policy-makers should consider another option;
- affordability – expensive but effective interventions may need to be rejected due to departmental budgetary constraints; and
- diversity – policies should ensure that they do not discriminate against anyone on the basis of age, gender, race, disability or sexual orientation.

In addition to these broad guidelines for policy evaluation and in order to ensure consistency with the ‘whole-systems’ approach to policy-making recommended by our theoretical review, the evaluations also considered the structure and process of each of the evaluated policies. This included:

- i) the broader context in which each policy is set;
- ii) the intended target audience;
- iii) the theoretical underpinnings informing the overall policy approach; and
- iv) the extent to which the policy is vertically and horizontally integrated with other policies and delivery mechanisms (i.e. between sectors, at every level of behaviour for all relevant target audiences).

3.2 Summary descriptions of the policy instruments

3.2.1 The Market Transformation Programme (MTP), 1996 - present

The Market Transformation Programme (MTP) supports sustainable consumption and production, in particular policies and delivery programmes which encourage competition and innovation in the environmental performance of traded goods and services. The aim of the MTP is to support the development and implementation of UK Government policy on sustainable products, with the strategic focus of improving the availability, take-up and use of products that are more energy-efficient and less environmentally damaging over their lifetime. The MTP facilitates the delivery of effective Europe-wide standards via measures such as mandatory energy labelling, mandatory energy efficiency requirements and voluntary industry agreements. The MTP aims to lift the barriers and constraints to the diffusion into the market of the most energy efficient products available.

3.2.2 BioWise, 1999 - 2005

BioWise was a major UK Government Programme funded by the DTI. It aimed to improve the competitiveness of UK industry through the use of biotechnology and to support the development of the UK biotechnology supplier industry. A range of delivery mechanisms

was adopted to achieve this, including independent advice, publications, information events, information provision to biotechnology suppliers and funding for user-led projects.

3.2.3 The Green Claims Code, 1998 - present

The Green Claims Code is designed to deal with the problem of loose and careless advertising on products that make dubious claims about their pro-environmental performance. The aim of the Code is to achieve a common consensus and ground rules on labelling and products that make green claims, to encourage the use of sound information on products. The Code sets out the standard of information that the public can expect to be given about the environmental impacts of consumer products (DTI/DETR, 2000). Adherence to the Code is voluntary, but regulators can use it as a framework.

3.2.4 Warm Front, 2000 - present

Warm Front provides infrastructure and advice to help combat fuel poverty. The Scheme provides grants for insulation and heating to homes in the owner-occupier and private rented sector for people at risk of fuel poverty, as well as advice on how to lower fuel bills. The policy's explicit aims are primarily social, i.e. to combat fuel poverty, however, improving people's use of insulation and heating in order to conserve more energy has marked environmental benefits. Before 2000 the scheme was called the Home Energy Efficiency Scheme.

3.2.5 UK Emissions Trading Scheme, 2002 - present

The UK Emissions Trading Scheme began in April 2002, with 33 companies or 'direct participants'. Each company bid for annual cumulative emissions reductions targets, set against a 1998-2000 baseline, in return for a share of the £215 million (bidders were limited to receiving no more than 20% of the total budget). The scheme had three aims, (i) to secure cost-effective reductions in Green House Gas (GHG) emissions; (ii) to give UK companies early experience of emissions trading and a competitive advantage before the proposed launch of the European Union Emissions Trading Scheme (EU ETS) in 2005; and (iii) to encourage the establishment of emissions trading centres in London.

3.2.6 Energy Efficiency Advice Centres, 1993 - present

In 1993 the Energy Saving Trust began funding 30 Local Energy Advice Centres across the country. This has developed into 46 Energy Efficiency Advice Centres and three Sustainable Energy Centres, which together employ around 450 people. The objective is to create a respected and widely utilised network of advice centres that encourage households to understand and then take action to reduce the negative environmental impact of their energy use. The fundamental delivery mechanism is the Energy Efficiency Advice Centres themselves, all of which are independent. The Centres also carry out training for frontline workers who interact with householders, offer presentations to groups such as schools and community groups, and work with the media to raise public awareness about the existence of

the work that the Centres carry out. There is an 0800 helpline and home visits can also be arranged on request.

3.2.7 Waste Minimisation and Recycling Fund, 2002 - present

The Waste Minimisation and Recycling Fund was initiated to combat the lack of local recycling infrastructure and to help local authorities to meet their recycling targets. The aim is to provide recycling facilities, leading to a long-term increase in levels of household recycling. Local authorities are invited to bid for a capital grant to fund a project proposal. Some revenue funding and extra resources to assist local authorities with communication tools to accompany their project were also provided in the first year of the project.

3.2.8 HM Government Sustainable Development Strategy Headline Indicators, 1996 - present

The UK Government first produced a set of Headline Sustainable Development Indicators in 1996. A new strategy was produced in 1999, along with a new set of indicators. It is hoped that these will be seen as a mechanism for improving accountability in Government performance on sustainability and that they will be regarded in the same light as more traditional performance measurements such as GDP. The key delivery mechanism is effective communication and dissemination of the indicators in order to hold Government to account, raise awareness of the issues involved in sustainable development and to provide a benchmark for achieving change.

3.2.9 Environmental Action Fund, 1992 - present

The Environmental Action Fund (EAF) is a Defra funding scheme which helps voluntary and community sector groups to further the Government's sustainable development objectives within England. Grants awarded to groups range from £25,000 to £250,000 per year (£75,000 and £750,000 over the three year grant period). As part of the eligibility criteria groups have to find eligible matching funding and ensure that a work plan is agreed with Defra containing well defined objectives, measurable outcomes and clear timescales.

3.2.10 Common Agricultural Policy (CAP) Single Payment Scheme - Set-aside, 1992 - present

The set-aside scheme started in the late 1980s and is used as a production control measure to curb the surplus production of cereals in the EU. Environmental benefits are also sought as farmers are encouraged to use their land in alternative ways to conventional cereal production. Farmers are paid to meet agri-environmental measures, receiving payments for setting land aside from production.

3.2.11 England Rural Development Programme (ERDP) – Rural Enterprise Scheme, 2001 - present

ERDP is consistent with wider Government policies on diversification, tourism and improved food marketing. The scheme aims to encourage diversification of the rural economy in a sustainable way and more sustainable land management, with a particular emphasis on farmers. Its delivery mechanism is a Capital Grant to fund one-off projects, for which farmers bid competitively.

3.2.12 Common Fisheries Policy – Total Allowable Catches, 1983 - present

Total Allowable Catches were introduced in the European Community (now the European Union) as part of the Common Fisheries Policy (CFP) in 1983. The goal is to reverse the decline of fish stocks and create a more sustainable fishing industry. Member States share fishing opportunities in the form of quotas amongst their fishermen, fixing the maximum quantities of fish that can be caught from a specific stock over a given period of time.

3.2.13 Public Sector Food Procurement Initiative, 2003 - present

The Public Sector Food Procurement Initiative targets the demand-side of the food market (by encouraging public sector bodies to procure food in a manner that promotes sustainable development) and the supply-side (encouraging more small and local farmers, producers and suppliers to compete to supply these bodies with food). The Initiative aims to create widespread understanding of the importance of sustainable procurement through the development of tools and guidance for suppliers and procurers. On-going training is used to continually improve performance across the public sector in delivering the Initiative's aims, along with the publication of best practice case studies. Government Offices for the Regions (GORs) and Regional Development Agencies (RDAs) are encouraged to involve regional and local newspaper editors in selling the initiative within their communities.

3.2.14 Framework for Sustainable Development in the Government Estate, 2001 - present

The Framework for Sustainable Development in the Government Estate outlines policy tools for Government departments to adopt in order to improve their respective records on sustainable development. The aim is to help Departments identify resources within a structure of targets, while allowing flexibility to implement these targets. The principle mechanisms are process targets which provide a yardstick of performance and drive departments to improve estates. The Framework covers common themes such as CO₂ emissions, energy-efficiency and Combined Heat and Power (CHP).

3.3 Evaluating the effectiveness of past policies

Part 2 of the Annex to this chapter offers a detailed examination of each of these instruments against a specified set of evaluation criteria identified by the methodology (see also Part 1 of the Annex). The remaining sections of this chapter draw out some broader observations to inform better future policy-making for influencing pro-environmental behaviours arising from these detailed evaluations. Clearly, the effectiveness and efficiency of a policy in achieving its planned aims will be highly dependent on the type of market failure or

externality that is being addressed, the embeddedness of the behaviour and the target audience.

3.3.1 Economic instruments

Only one solely economic instrument was reviewed by this study and, as this was the UK Emissions Trading Scheme, it is not representative of more traditional fiscal instruments. Emissions-trading is an interesting policy measure because it combines economic incentives with disincentives; companies who have achieved reductions in emissions are able to profit by selling surplus permits to other companies who have a deficit of permits. It is also popular because it emulates the market. There were some teething problems with the UK schemes associated with permit levels and the timing of opportunities for innovation, which have now largely been resolved.

Most of the other policies were using economic incentives in combination with other complementary measures, such as information provision or regulation, in an attempt to target all aspects of a given behaviour. This suggests that policy-makers are already aware of theoretical and modelled understandings of environmental behaviour change and the need to take a multi-instrument approach.

Some theorists have suggested that policy-makers will need to put greater emphasis on direct interventions and rely less on voluntary changes, if they are to achieve the level of change they require to meet environmental targets. Our review suggests that if this is to be the case, they will need to take great care to clearly justify any additional taxes and charges that are levied to raise money for infrastructure provision or find alternative (non-tax-based) methods for providing such finance. The role of the market and private finance will, therefore, be crucial to the provision of new infrastructure and for delivering technological innovation with existing markets.

A key issue for policy-makers is how to efficiently incentivise this process and encourage pro-environmental entrepreneurial leadership within industry in the most rapid and efficient way. It is likely that subsidies and grants will only ever be short-term solutions to achieve this. The CAP Set-Aside Scheme demonstrates that producers will change their business practices when paid to do so, but that this behaviour change is not necessarily sustained over the longer-term (in the absence of subsidies). There has also been widespread criticism of CAP within environmental policy circles because it supports agricultural production above the free market level, adding further distortion to the market and exacerbating market failure. It is also unclear whether, given a 'do nothing' scenario, the market could not have produced the same or similar outcomes as the policy intervention. More generally, EU farmer subsidies have been criticised by the sustainability lobby as distorting world trade with consequences for the developing world.

Clearly, the review has not undertaken evaluation of the full range of economic instruments available to Government for encouraging pro-environmental change. As such, it offers only a partial insight into the effectiveness of these instruments. Clearly, the use of environmental taxes (such as the Climate Change Levy), local charging schemes (such as congestion charging), allowances (such as the Pensioners' Warm Allowance), the removal of environmentally harmful subsidies (such as the Company Car Tax Allowance) and other

fiscal measures all have a role to play in a ‘package of measures’ for pro-environmental change.

The evidence that is available to us suggests that in developing economic instruments for pro-environmental change policy-makers should:

- be aware that taxation and tradable permits will be most effective where marginal benefits and external costs are known with certainty and the optimal level of acceptable pollution is already set by legislation;
- ensure that they are sending clear and consistent pricing messages to their target audiences and be wary of perverse incentives and associated market failures;
- recognise that businesses may choose to absorb the cost of environmental taxes and charges, thus nullifying their impact on consumer behaviour (e.g. compensation carbon tax on aviation fuel through price reductions in tourist packages). Nonetheless, in the longer-term this may still bring about a change in producer behaviour;
- be aware that lack of public acceptance of an additional charge may serve to undermine the intervention both now and in the future (e.g. the Fuel Tax Escalator);
- consider whether beneficiaries of subsidies and/or grants would have behaved in a similar way over time without need of the intervention;
- recognise the full administrative cost of these policies, both to the Government and/or third parties when enforcing compliance;
- avoid placing an excessive burden on the most vulnerable individuals in society and/or reducing the competitiveness of organisations, especially SMEs;
- consider the cost to the economy of any subsidies, credits, vouchers and benefits over and above the actual cost of administering these.

3.3.2 Regulatory instruments

Economic instruments are likely to be most effective in securing improved environmental outcomes when combined with regulatory standards (a physical standard is set to reflect an acceptable level of behaviour and then a tax levied to raise the price level to achieve the standard). This combination approach can be particularly effective where the relationship between environmental damage and the source of that damage is unclear (non-linear or discontinuous). Where there is a lack of environmental and social data, however, standard setting is often criticised as being arbitrary and possibly unfair.

Our review evaluated three regulatory policies targeted at pro-environmental change, as follows:

- i) the EU Common Fisheries Policy (CFP);
- ii) the Green Claims Code; and
- iii) the Market Transformation Programme (MTP).

One of the lessons that appears to have been learned from the development and delivery of regulatory instruments over time has been the need for greater involvement of target audiences early in the development of regulatory policies. This helps to reduce the perception of unfairness, improve compliance and improve policy effectiveness against targets. Comparison of the CFP and the MTP demonstrate the importance of this lesson.

There is already general recognition within Defra of the lack of stakeholder involvement during the development of CFP. Clearly, this was at a time which pre-dates many of the latest theoretical understandings of behaviour change that are now available to policy-makers. A recent Defra report suggests that the fishing industry will be given a greater role in coordinating information priorities in the future, through more extensive use of co-commissioned research (Defra, 2005a). The Market Transformation Programme (MTP) demonstrates that more inclusive approaches to regulation are already being delivered by the Department.

Our evaluation suggests that regulatory instruments, although often burdensome to deliver and costly to enforce, have an important role to play in both encouraging pro-environmental behaviours (mostly at the organisational level) and for establishing and reinforcing new social norms. Once again, the limited evidence from our evaluations of existing regulatory policies appears to be consistent with the messages of the theoretical review in that:

- regulatory policy is often administratively difficult and costly to enforce, so it is better to introduce it in situations where the majority of the target audience is willing, ready and able to comply and in combination with pricing policies to correct failures in the market;
- compliance is more likely where stakeholders are actively engaged in the development and enforcement of regulatory measures – a participatory approach is particularly essential at the initial policy development stage, but there should also be opportunities for stakeholder feedback and reflective learning built into the delivery process;
- it is important to understand the overall process in which regulation is occurring – target audiences are not mechanisms with buttons to be pressed and may act perversely to undermine regulations if they do not support their intention;
- regulatory policies need to be context specific and will generally be ineffective in complex scenarios or where there are mixed messages;
- there is particular value in creating a learning process between Government, producers and consumers in the introduction of regulatory policies – the problem of market failure in a given system of delivery needs to be recognised by all the actors participating in that exchange and solutions to the problem identified collaboratively. Long-term behaviour change is more likely to occur where this is the case;
- regulation alone will not encourage longer-term change or establish new social norms and needs to be supported by information, fiscal and other incentives, supporting infrastructure and incentives for technical innovation.

3.3.4 Social/Voluntary instruments

Our study evaluated four policies with environmental information dissemination and awareness raising as their core objectives. In the case of Environmental Action Fund, financial incentives were provided alongside information and advice to target audiences. The four policies were:

- i) UK Energy Efficiency Centres (EECs);
- ii) BioWise;
- iii) Environmental Action Fund (EAF); and
- iv) Public Sector Food Procurement Initiative (PSFPI).

The examples targeted different levels of behaviour: EECs target individual behaviours within households, BioWise aims to promote the development and take-up of bio technology within industry, EAF is designed to assist community and voluntary sector groups, and PSFPI aims to influence the procurement practices of larger public sector organisations.

A recent National Consumer Council study of EECs (Steedman, 2005) has been highly critical of the Centres, identifying them as the least popular sources of information with the public and suggesting that most people do not actively seek out environmental advice. Nevertheless, between them the 47 Centres that are now operating have handled over 7 million customers since 1993 and 35% of homeowners are aware of the Advice Centres (Jigsaw Research cited in Darnton, 2004).

EAF provides an example of Government working far more interactively with the key stakeholders, although it is perhaps not as fully devolved as ‘action learning’ theorists would recommend. A 2001 consultative evaluation of the EAF identified a number of process-related criticisms. Respondents found the Fund difficult to ‘penetrate’, overly bureaucratic, stringent and ‘unforgiving’ in its application/short-listing process. They criticised it as lacking in direction and having insufficient lead-times on applications, whilst at the same time being late in giving notification of application results. Other problems raised by respondents were poor communication of the Fund’s objectives and the limited size of its budget compared to the cost of its operation. The evaluation report concluded that the EAF had been:

“Ineffective and inefficient in its use of resources (compared to the size of other funds). The cost and process of administering the EAF are considered to be adversely disproportionate to the size of the overall ‘pot’ and the amounts awarded”

(DETR, 2001:59).

The main criticism of the seems to focus on its lack of stakeholder involvement sufficiently early in the decision-making process. This echoes the findings of our theoretical review, which recommends that there are currently insufficient feedback loops between stakeholders and Government and, thereby, a missed opportunity for reflective learning. The fund has since been redesigned in response to these findings.

One of the key lessons emerging from our theoretical review has been that policy-makers need to avoid a ‘knowledge deficit model’ of policy construction. There is clearly a need to move beyond a position that suggests that better information and public understandings of the problem are all that is required to encourage pro-environmental behaviours. The importance of this message is also strongly reinforced in the policy evaluations, although it would appear that this lesson has been partly addressed in the more recent policy examples under review.

In the context of holistic and integrated policy-making, instruments that aim to improve public knowledge about the environmental effects of their behaviours are an important part of the policy package. Some key points have emerged from our policy review in relation to the development and implementation of these policy instruments.

- Consumers are more likely to seek out information on well-publicised topical issues. They need clear and simple messages and should be able to see fairly immediate and tangible benefits from their changed behaviours;
- The people who are currently less likely to seek out environmental information come from lower economic income groups (D and E), are younger (15-24 year olds) or older (65%+) and generally have less access to the internet;
- Different industrial sectors need specific advice tailored to their own activities and needs and the ways they perceive their own market activities;
- Policy-makers need to be more responsive to feedback from target audiences and should incrementally adapt their information programmes to better accommodate their needs;
- Research has demonstrated that engaging target audiences in the design and presentation of environmental information and change programmes increases the likelihood of their impact on actual behaviours;
- The limitation of information-based and educational programmes needs to be recognised and confronted by policy-makers. They work best as a package of measures, which include clear pricing mechanisms and regulatory standards.

3.3.4 Other instruments

Our study evaluated five instruments falling under this broad category of ‘other’, as follows:

- the England Rural Development Programme Rural Enterprise Scheme (RES);
- HM Government Sustainable Development Strategy Headline Indicators (indicators);
- Framework for Sustainable Development in the Government Estate ;
- the Waste Minimization and Recycling Fund (incentives for innovation); and
- Warm Front (incentives for innovation).

Goal setting

The ‘Defra Sustainable Development Diamond’, presented in the Government’s Sustainable Development Strategy (HM Government, 2005) provides an overarching model or approach to policy-making for achieving pro-environmental behaviour. This needs to be supported by a set of clearly articulated goals and targets for behaviour change, as part of a high-level awareness raising strategy. To be effective, it needs to consider all sectors and audiences at every level of behaviour. As previously noted, goals and targets are more likely to be achieved where they are developed in negotiation with, and have the support of, target audiences and delivery agencies.

Infrastructure provision

Warm Front was designed to address a shortfall in the provision of infrastructure for pro-environmental behaviour change at the household level backed-up with advice to consumers. The Programme has suffered from a conflict between eligibility and effectiveness; many of those living in the least energy efficient homes and suffering from the greatest fuel poverty are ineligible for assistance (this is for a variety of reasons including their benefit claimant status and residential circumstances). One interesting element of the scheme is that it clearly demonstrates how positive environmental outcomes can be achieved without the need for a change in the attitudes of end users. It should be noted that the actual energy savings

resulting from the Warm Front programme have not been recorded. The Fuel Poverty Strategy set a target that the Warm Front Scheme should have assisted 800,000 vulnerable households by 2004. This meant that the Scheme's effectiveness has been monitored by take-up rather than by overall energy savings or savings by each property. The aim of maximizing the number of homes receiving help has also tended to sway assistance to the most accessible households rather than those most in need of assistance (NAO, 2003).

Use of indicators

When indicators have strong cross-departmental commitment, are measurable and have transparent links with performance they can be powerful influencers of strategic decisions by decision-takers within Government and local authorities and practitioners. Performance-based indicators serve to concentrate the minds and resources of policy-makers and their delivery agencies. There is a plethora of guidance relating to the development of robust and accountable indicators from both central Government and non-governmental organisations.

The considerable UK experience suggests an element of naivety when the first headline indicators were published. They were anticipated as great drivers of change, but were mostly only summaries of the current position of UK policy in relation to its environmental performance: largely unchanged. One problem was that the indicators were being monitored at such a high level of geographical aggregation that it was impossible to recognise or influence lower level (local authority or neighbourhood) or sector-by-sector performance. One notable exception was the UK wild bird population indicator which successfully influenced policy development within Defra.

Widespread communication has proven to be one of the biggest challenges of the UK headline indicators. Once the headline indicators were effectively communicated to the public, the Press felt able to report on them and have been seen to use them as a benchmark of Government performance and accountability (albeit most usually negatively).

There have been criticisms by NGOs, academics, environmental campaign organisations and the Voluntary and Community Sector that the Government's indicators suggested a 'bona fide list', an indicator set to override all others, in what is actually a developing area of knowledge. This problem has been partly addressed as the initial set of headline indicators have been incrementally updated and revised as and when more relevant and/or robust data has become available, demonstrating Government's willingness to respond to external influences.

Participatory approaches

There is evidence to suggest that policy-makers are beginning to see target audiences as actors at the heart of the change process. There is increased emphasis in some of the more recent policies, for example, the Rural Enterprise Scheme, on devolving responsibility to actors closer to the problem or allowing the target audience for an intervention considerable responsibility for achieving change.

With this increased emphasis on the private sector finance, devolved delivery and involvement and empowerment of the Voluntary and Community Sector groups, the pressing need for effective formalised 'feedback loops' to drive and sustain change at both the development and delivery stages of policy is increasingly apparent. More emphasis should also be placed on creating mechanisms for constant policy revision and improvement. An initiative such as the Emissions Trading Scheme might have benefited from this kind of

process, highlighting potential pitfalls such as companies setting modest targets or non-CO₂ emitters having a clear market advantage, before the scheme's implementation. Undertaking consultation on a problem, however extensive, is not the same thing as demonstrating shared ownership of a problem and a shared understanding of the challenge in hand.

Given the breadth of this catchall set of 'other instruments' for influencing environmental behaviours and the extremely limited scope of our case study evaluations, it is difficult to draw any robust recommendations for future policy-making. A few observations should however be noted:

- indicators need to be measurable and transparently linked to target outcome behaviours – to achieve this they need to be capable of disaggregation both at the sector and spatial level and to clearly communicate the desired direction of change to target audiences;
- indicators will only be effective as instruments of behaviour change if they are well publicised and secure the 'ownership' of those agencies responsible for their performance delivery;
- indicators should concentrate on desired outcomes (levels and extent of behaviour change against targets) rather than simply counting outputs (throughput of customers/uptake);
- it is essential for policy-makers to ensure that indicators take account of 'whole system' performance and do not serve to provoke perverse behaviours;
- provision of infrastructure and the development and take-up of technological innovation is essential for achieving large-scale behaviour change at both the household and organisational level – this should be integrated with awareness raising activities, standard setting and appropriate pricing signals;
- one key problem for policy-makers with policy designed to assist infrastructure provision is ensuring its effective and efficient use by end users. Particular care should be taken to ensure equity of access to both facilities and accompanying information concerning eligibility. Extra efforts may be needed to ensure that traditionally 'hard to reach' groups and sectors are given proper access.

3.3.4 Taking a 'whole system' approach

The OECD report argues for a new approach to policy, offering policy parameters that focus on *structure*; use of *life-cycle strategy and analysis*; and an *integrated, cross-sector policy approach* that offers *consistent messages to consumers* (OECD, 2002: 93-4). From our review, there appears to be an increasing acceptance amongst policy-makers that behaviours are complex and thus require a multi-instrument approach. The Environmental Action Fund, in providing internal assistance (information and support) to Voluntary and Community Sector initiatives, as well as external funding, is a good example of this.

However, there is less evidence of movement away from mechanistic views of behaviour and in turn regarding policy interventions as a set of coherent levers to be pulled in order to generate change. An intervention such as the CAP Set-Aside Scheme, essentially a production control measure, exemplifies this mechanistic approach, providing a financial incentive (the lever) for a targeted behaviour change (setting aside a certain percentage of arable land).

Where a package of measures has been designed to address multiple behaviours, there is little to suggest any consistency in policy intention across the different Government departments. For example, policies that offer greater parental choice in the selection of schools (which are known to generate increased car travel) are offered simultaneously with policies that aim to encourage reduced car use. Policy recipients are left in a position where they do not know which behaviour is being supported.

There are few policy measures that can purport to have adopted a robust and thorough approach to all four corners of the Defra Sustainable Development Diamond. Often one corner might provide the foundation to a policy measure, while another might only be partially addressed. A policy measure like the Rural Enterprise Scheme encourages pro-environmental behaviour by offering grants to farmers to fund schemes that diversify their output. There is however little emphasis on building skills that will take best advantage of the financial impetus.

Even where policies aim to consistently address multiple factors, utilising a range of tools, there is little evidence of systematic intervention across all three behavioural levels (individual, organisational, systemic), that ultimately addresses society as a whole in order to achieve long-term normative change.

3.3.5 Equity, distribution and other side effects

Environmental justice is a key theme within the UK Sustainable Development Strategy and it is clearly important that policy-makers ensure that policies at least avoid disproportionate negative financial and environmental outcomes for the most vulnerable in society and at best reduce inequalities of outcome. Equity concerns are particularly associated with environmental taxes and charges, which can also negatively impact on the competitiveness of small businesses. Compliance is likely to be least where policies are perceived as unfair, or poorly targeted, and where alternative options do not appear to be available.

When evaluating the likely equity of a policy outcome, it is important to consider both exposure to negative environmental externalities and its effect on opportunities to access goods and services. Any increase in the overall cost of a product or service will be most likely to impact on the activities of groups at the margins, who may experience greater social exclusion as result of being financially prevented in continuing to participate in that activity. In the past, people on low incomes have tended to be less able to access environmental information and less able to participate in pro-environmental behaviour as a result of policies that have failed to consider their particular needs.

It is also important to consider the wider distribution of policy outcomes, both in terms of their geographical spread and across the different market sectors. Some sectors, for example the building trade, have been demonstrably less responsive to environmental policy directives than others.

Finally, past policies have demonstrated all sorts of unforeseen side effects, such as the discarding of catches by fishing fleets in response to species-based quotas leading to an increase in the proportion of 'at risk' species.

3.4. Conclusions and recommendations for future policy-making

The policy review for this study has been limited in both depth and scope: it has selected a small sample of fourteen policy instruments and attempted to qualitatively assess their effectiveness. These individual instruments often form part of a wider programme of delivery, which this study has not been able or required to assess. Our assessments have been based on the available evidence from two key sources: published and internal evaluation reports and the views of policy officers who have been observers of the delivery of these programmes. The study can, therefore, offer only a partial and subjective evaluation of the success of these policies and should in no way be taken to be a representative of the wider picture.

In order to facilitate systemic evaluations of Defra policy in the future, the Department needs to ensure more effective and consistent data collection and collation and measurement of performance. In future, the appropriate formal evaluation structures should be put in place at the stage of policy-development. These may need to be adapted in the light of actual performance on the ground.

Over and above this recommendation for future research, the policy review suggests that there are some further lessons that policy-makers can draw from past experience.

1. Policies for pro-environmental behaviour change need to pull in one direction and convey a consistent message to target audiences and the public in general if they are to achieve any degree of success. This consistency needs to apply across Defra policies and with those coming from the EU, and (possibly more importantly) to those being developed by other departments.
2. Policy instruments appear to be most effective when they tackle all aspects of behaviour at all levels. This suggests that it is rarely appropriate to use a solely economic, regulatory, social/voluntary or 'other' approach. Policy-makers will usually need to develop 'packages' of measures to tackle the 'whole system' of behaviour. Defra must work collaboratively with other departments to achieve the level of policy integration that will be required to achieve visible and sustained improvements to environmental outcomes.
3. Policies appear to be more effective when they take a participatory approach with both delivery agencies and end users during their formulation, implementation and evaluation. Negotiating the shape and intention of a policy (and how it can best be monitored and evaluated) with target audiences helps to build legitimacy and raises the chance of its success.
4. To be effective, policy measures usually need to be highly context specific. Devolving responsibility for policy development and delivery to locally accountable bodies (local authorities, business and industry, the Voluntary and Community Sector groups) generally can help to ensure their local appropriateness and can also help to build their legitimacy. Care should be taken to ensure that the relevant skills, resources and capacities are available within these organisations to take on these additional duties.
5. Policy-making appears to be more effective where there is a genuine reflexive learning process between Government, consumers and producers. Target audiences are more likely to adapt their practices in the interests of seeing a policy work when they have been involved in its formulation.

6. Points 1-5 suggest that policies will be more effective when Government provides the overarching strategy for change and identifies headline targets and milestones and then devolves as much responsibility for policy design and implementation to organisations that are closest to the end behaviour they are intended to affect.
7. There is a value in Government having 'first-mover' advantage on policies and leading by example, both within the UK and abroad. Local authorities and other organisations are willing to follow the Government's lead where the guidance is clear and the value of doing so obvious. The UK Emissions Trading Scheme is one example of this, allowing organisations and businesses to adapt to a voluntary trading scheme, before the set-up of an EU mandatory scheme.

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Annexes to Chapter 2

Part 1 – Evaluation methodology

The study included a desk-review and evaluation of fourteen policy instruments designed to target pro-environmental change either at the individual, organisational or whole system level. These were selected from a long-list in close collaboration with the Defra team. The policy review and evaluation was based on data collected and collated through a combination of the following methods:

- publicly available information from internet sites and publicly available reports (for example evaluation or assessment reports), plus relevant information from academic literature or relevant publications from stakeholders in the policy community.
- expert interviews with members of the respective policy teams for each policy covered, in person or by telephone. In most cases the interviewee acted as a representative of the policy team and sought the assistance and opinions of other members in their respective team.

The following policy websites were accessed:

- The Market Transformation Programme (MTP) - <http://www.mtprog.com>
- BioWise - www.biowise.org.uk
- The Green Claims Code -
<http://www.defra.gov.uk/environment/consumerprod/gcc/>
- Warm Front - <http://www.defra.gov.uk/environment/energy/hees/>
- UK Emissions Trading Scheme -
<http://www.defra.gov.uk/environment/climatechange/trading/uk/>
- Energy Efficiency Advice Centres - <http://www.est.org.uk/myhome/>
- Waste Minimisation and Recycling Fund -
<http://www.defra.gov.uk/environment/waste/localauth/wastefund/>
- HM Government Sustainable Development Strategy Headline Indicators -
<http://www.sustainable-development.gov.uk/performance/performance.htm#>
- Environmental Action Fund - <http://www.defra.gov.uk/environment/eaf/>
- CAP Single Payment Scheme - Set-aside -
<http://www.defra.gov.uk/farm/capreform/singlepay/setaside/>
- England Rural Development Programme (ERDP) – Rural Enterprise Scheme -
<http://www.defra.gov.uk/erdp/schemes/res/default.htm>
- Common Fisheries Policy – Total Allowable Catches -
<http://www.defra.gov.uk/fish/fishindx.htm>
- Public Sector Food Procurement Initiative -
<http://www.defra.gov.uk/farm/sustain/procurement/>
- Framework for Sustainable Development in the Government Estate -
<http://www.sustainable-development.gov.uk/delivery/integrating/estate/estate.htm>

Telephone or face-to-face interviews were held with a key representative of the following policy initiatives:

- The Market Transformation Programme (MTP): AEA Technology

- The Green Claims Code: Defra
- Warm Front: Fuel Poverty Team, Defra
- Energy Efficiency Advice Centres: The Energy Savings Trust
- UK Emissions Trading Scheme: Defra
- Waste Minimisation and Recycling Fund: Defra
- HM Government Sustainable Development Strategy Headline Indicators: Defra
- Environmental Action Fund: Defra
- CAP Single Payment Scheme – Set-aside: Defra
- Common Fisheries Policy – Total Allowable Catches: Defra
- England Rural Development programme (ERDP) – Rural Enterprise Scheme: Rural Economies and Strategy Division, Rural Diversification Team, Defra
- Public Sector Food Procurement Initiative: Defra
- Framework for Sustainable Development in the Government Estate (plus Greening Government): Defra

A common framework was devised to provide structure to the data gathering process, allowing us to carry out clear (and replicable) comparisons. The framework employed the following headings:

- Background, the context and history of the policy and the reasons for its inception
- Aims, what the policy intervention set out to achieve and the wider strategies the policy fitted into
- Delivery mechanism, the main instrument the policy used to achieve change
- Who leads and who delivers, the department, agency or organisation responsible for leading on the policy and the people expected to deliver the change
- Target audience, the target group for the policy
- The timescale of change targeted
- Outcomes, effects of the policy intervention
- Effectiveness and cost effectiveness
- Links to change theory, including linkages to models and theories in section 1 of the study
- Lessons arising, both positive and negative lessons
- What could be done differently
- Legacy, changes, actions or initiatives created as a result of the policy intervention

This was followed by a critical and comparative analysis of the policy interventions, identifying common lessons and highlighting common themes between the policy interventions and environmental behaviour change theory.

Annexes to Chapter 2

Part 2 – Evaluations of individual instruments

Economic Tools:

The UK Emissions Trading Scheme
<p>Aims</p> <p>The scheme had three principal aims: to secure cost-effective reductions in greenhouse gas (GHG) emissions; to give UK companies early experience of emissions trading and a competitive advantage before the proposed launch of the European Union Emissions Trading Scheme (EU ETS) in 2005; and to encourage the establishment of emissions trading centres in London.</p>
<p>Delivery Mechanism</p> <p>The underlying principle behind emissions trading is to ensure that reductions of emissions occur where the cost of the reduction is lowest, lowering the overall costs of combating climate change. The Government sets the overall cap for the scheme. This allows the Government to regulate the overall amount of emissions and the participants to determine how and where the emissions reductions are achieved. With a trading scheme the Government decides the environmental outcome, displacing uncertainty onto the cost of compliance.</p> <p>Under the UK ETS, participating companies are allocated allowances, each allowance representing a tonne of carbon dioxide (CO₂) equivalent. Companies can emit in excess of their allocation of allowances by purchasing allowances from the market, allowing for variation in a company's production of CO₂. A company that emits less than its allocation can sell its surplus allowances, creating a financial incentive for cutting emissions (Defra website, 2005).</p> <p>The UK ETS provides a framework for companies to become more energy-efficient. Companies can also use participation in the scheme as a reputational marketing tool. The auction mechanism provides an incentive for companies to bid-in substantive reductions, meaning Government does not have to micro-manage the process of allocation. Finally, the voluntary aspect of the scheme allowed companies to adapt to such a scheme before the imposition of a mandatory scheme.</p>
<p>Background</p> <p>The UK Emissions Trading Scheme (ETS) was designed to help the UK Government meet and exceed its commitments under the 1997 Kyoto Protocol. Lord Marshall's 1998 report <i>Economic Instruments and the Business Use of Energy</i> outlined how best to use new economic instruments to improve the industrial and commercial use of energy and help reduce emissions of greenhouse gases. Several options were recommended, including a UK-wide Emissions Trading Scheme (ETS) (HM Treasury, 1998). Following the report Defra received £215 million from the Treasury to fund the scheme from 2002-2006; the scheme began in April 2002. It was the first emissions trading scheme in the world and was acknowledged by the National Audit Office as a 'pioneering initiative'. In the first year of the scheme, 33 companies - 'direct participants' – volunteered to be involved and each had to bid for annual cumulative emissions reductions targets set against a 1998-2000 baseline, in return for a share of the £215 million (bidders were limited to receiving no more than 20% of the total budget). The scheme was not mandatory (NAO, 2004).</p>
<p>Who Leads and Who Delivers</p> <p>A UK registry oversees the running of the scheme, but once the allocations are in place it is down to the participants in the scheme to deliver reductions in their GHG emissions.</p>
<p>Target Audience</p> <p>The target audiences were private companies and public sector organisations. Participants in the scheme ranged from large multinational corporations such as Shell and BP to local authorities and museums. When the scheme was launched in 2002 almost every organisation in the UK (apart from power stations) was eligible to join.</p>
<p>Timescale of Change Targeted</p>

The targeted change was long-term, preparing industry for future trading schemes and looking to change the way companies regarded their energy consumption. The Government's decision to introduce a trading scheme rather than regulation was in anticipation of a future trend towards emissions trading. Launching a voluntary pilot ETS enabled 'learning by doing' for participants and Government, and established the city of London as a centre for carbon trading before European and international trading schemes were launched.

Outcomes

Over the first three years (2002, 2003 and 2004), the scheme delivered emissions reductions totalling 5.9 million tonnes of CO₂ equivalent (Defra website, 2005), demonstrating far more potential than participants had realised for reducing emissions. Targets were arguably too low in the first year with companies naturally risk-averse (NERA, 2004).

(Cost) Effectiveness

The scheme allows companies a competitive advantage in that they have a chance to experience and learn about emissions trading before it becomes mandatory or applied at the European level. Many participants in the scheme make a profit and are incentivised to become more energy-efficient. While £215 million is a considerable amount of Government funding, the benefits to Government and business in terms of learning by doing and first mover advantage deserve to be fully acknowledged.

Links to Change Theory

There is a strong incentive for companies both to profit from the scheme and to avoid costs. These drivers are identical to those shown to determine supply chain behaviours in models of environmental purchasing. Participation in the scheme was voluntary, meaning the scheme was reliant on an existing will from industry to learn about such a scheme and to become more energy efficient.

Lessons Arising

The 'learning by doing' objective of the scheme has been a considerable success: far more emissions savings were achieved than had been projected and the City of London is now regarded as an international centre for emissions trading (NAO, 2004).

The scheme created an understanding about emissions reductions amongst participating companies, in a way that a tax might not have done, because of the level of decision making devolved to participating organisations. As discussed, the scheme provided both an opportunity to make money and a risk of generating costs (NAO, 2004).

However, because some companies met their targets relatively easily, generating a surplus in emissions reductions allowances, the allowance price collapsed, tempering the incentive aspect of the scheme. After evaluation in 2004, tighter targets have been agreed with the top six performers whose targets were not seen as value-for-money. After the evaluation process companies feared regulatory action and were keen to comply with the new demands of the voluntary system. The large surplus of allowances and the low allowance prices have been regarded as evidence that there is insufficient demand for allowances, principally because targets were not set stringently enough, though other trading schemes have also witnessed similar over-achievement in early years (NERA, 2004: 19).

In some cases, participants' levels of emissions in the years leading up to the scheme had become lower than their baselines, meaning their targets had already been achieved before the scheme started. These participants could then sell allowances and receive money for continuing their operations at the same level, rather than receiving payment for cutting their emissions (NAO, 2004: 3).

What Could Be Done Differently?

There have been criticisms about the voluntary aspect of the scheme. Firstly, there is an intrinsic bias towards companies who had planned to reduce their GHG emissions in any case (in this example the scheme rewards them without requiring them to change their behaviours). For example, British Airways, knowing that they were scaling back domestic flights and thus reducing domestic emissions regardless of the policy, made a bid and received a share of the £215 million and the opportunity to sell surplus allowances. Secondly, companies are naturally risk-averse, leading to the setting of modest limits. Thirdly, abatement is cheap for non-CO₂ emitting companies, who can bid-in knowing that technological additions will bring down their emissions, generating windfall profits and dampening the drive for CO₂ emissions reductions. The National Audit Office, in its 2004 evaluation of the UK ETS,

concluded that in “a mandatory trading scheme, these issues would either not occur or, in the case of target-setting, would not give rise to an incentive payment” (NAO, 2004: 4).

Legacy

The UK ETS legacy has been to help companies prepare for mandatory emissions trading. Specifying appropriate technology or providing pro-environmental infrastructure might have been cheaper in the short-term, but would not have provided the platform for learning that was central to the scheme and to achieving long-term organisational change (NAO, 2004). The EU ETS is mandatory, there is no bidding process for allowances and non- CO₂ emitting companies are excluded; this suggests lessons have been learnt from the UK scheme. The scheme has raised the profile of the UK on the international stage and has given both Government and UK companies first-mover advantage in this area. 13 different countries have now adopted the UK’s licensed registry scheme. In a recent study, the Carbon Trust recommended that Government develop a new mandatory auction-based scheme, targeting 14,000 companies (Carbon Trust, 2005).

The Common Agricultural Policy – Set-Aside (Single Payment Scheme)

Aims

The scheme is primarily driven by economic considerations, with set-aside used as a production control measure, curbing levels of supply. Environmental benefits are also sought as farmers are encouraged to use their fallow land in alternative ways to conventional cereal production (Defra, 2005).

Delivery Mechanism

Farmers are paid to meet agri-environmental measures, receiving payments for setting land aside from production. After the 1992 EU reform, set-aside became a direct regulation (as a production control measure to lower production and in turn raise the market price).

Background

The set-aside scheme started in the late 1980s and was used as a production control measure. At its inception it was a voluntary optional measure. In 1992, after Arable CAP reform, set-aside was built in as a compulsory measure. In 2003 set-aside was carried forward into the single payment scheme. The percentage of land certified in the past has changed from year to year depending on the harvest, but is generally 10% of arable land. The scheme builds on the new decoupled system brought into CAP reform.

Who Leads and Who Delivers

Defra makes the payments on behalf of the EU in return for farmer’s compliance with the scheme.

Target Audience

The target audience is farmers.

Timescale of Change Targeted

The required behaviour change is very much long-term, given that it takes time to adapt to new measures.

Outcomes

Farmers are now aware of the alternatives to farming crops on poor land. Set-aside has been effective in reducing supply, though the degree of supply control has been variable due to variations in yield. The environmental benefits of set-aside, such as the development of an industrial crop sector, have not been maximised as they are “sensitive to the management practices of the land-owner” (Defra, 2005).

Set-aside has led to reduced inputs of fertilizers and pesticides and positive benefits to wild-life (Defra, 2006). The reduced inputs of fertilizers and pesticides means less pollution from set-aside than if arable crops were grown, delivering significant reductions in diffuse pollution nitrates and phosphates (Defra, 2006).

Wildlife in hedgerows benefits from reduced pesticide drift, while aquatic wildlife benefits from

reduced diffuse pollution reaching watercourses (Defra, 2006). The provision of winter stubbles and enhanced habitat for breeding in spring and early summer, have meant that set-aside land itself has provided improved habitat for farmland birds (Defra, 2006).

(Cost) Effectiveness

In general farmers have certified more land as set-aside than was required. Farmers have also found more uses for set-aside land, rather than simply removing land from production. There is also a permitted list of end-products that can be grown on set-aside land, provided they won't distort the market-price. As a positive by-product of the scheme set-aside has expanded to allow the growing of non-food and bio-energy crops, as well as generating environmental benefits such as increases in the wild bird population (Defra, 2005).

Links to Change Theory

The compulsion aspect is key, with the incentive of receiving a payment for setting land aside a complementary element. The basic tenet of the scheme is that farmers either participate in the scheme or don't claim the subsidy for all other supported areas.

Lessons Arising

Production of industrial crops such as oilseed rape and linseed are closely tied to set-aside. Farmer surveys in 1998 and 2000 showed that around 10% of set-aside land was used to grow industrial crops. Without the set-aside payment farmers would be far less likely to grow industrial crops, given the competitiveness of conventional arable crops, suggesting an emerging level of dependency on the subsidy payments (Defra, 2005).

Though cutting production, set-aside has shifted the burden of cost onto the tax-payer, particularly when compared to an uncompensated price cut or the system of price support (previous to the MacSharry reforms) that placed more of a burden on the consumer (Defra, 2005).

There is a risk that set-aside encourages a public perception of farmer's being paid to not farm (Politics.co.uk, 2006). It is also possible that farmers will be using set-aside as a means to farm less, rather than selling their farms and encouraging the development of other farm businesses. This could also discourage off-farm labour decisions to find extra sources of income and diversify (Defra, 2005).

Set-aside also makes no allowances for different types of land and their profitability with the highest proportion of set-aside going to the most profitable farms, in turn producing a regressive effect on the least profitable farms (Defra, 2005). The 1998 cereal survey showed a difference of around £140 per hectare in the profitability of farms in the highest income quartile, compared to the average (Defra, 2005).

Set-aside has led to a fall in income for farmers, though this has been calculated as a smaller decrease than had a price cut been implemented (Defra, 2005). As was expected with set-aside, the aggregate productivity of the cereal production fell, with estimated reduction in output due to set-aside "remarkably close" to the percentage of obligatory set-aside for farmers entering the scheme (Defra, 2005: 43). This is contrasted by the stable level of inputs, particularly labour and machinery (Defra, 2005). It is hard to calculate the exact effects of set-aside on profits as the measure was part of a package of reforms. However, the vast majority of farmers surveyed in 1998 felt that set-aside had had little affect on their profits (Defra, 2005).

Set-aside has had a detrimental effect on technical efficiency at the farm-level, though not as bad as had been expected (Defra, 2005). Technical inefficiency has come about as output has decreased despite the inputs, labour and capital, remaining the same. It is hoped that this will be addressed in the medium to long-term as farmers adjust (Defra, 2005). It is not clear whether set-aside has encouraged more structural changes in the farming industry (Defra, 2005).

The effects of set-aside alone on global poverty and rural development in the South are difficult to assess given that the policy is part of package of reforms and run alongside other measures such as partial decoupling. Aggregate productivity in cereals has fallen in the UK (Defra, 2005), but this does not necessarily mean increased access to markets for farmers from the developing world.

What Could Be Done Differently?

It is hard to assess the effectiveness of set-aside as a pro-environmental measure, partly because it is hard to provide a counterfactual against which to compare the scheme, and also because set-aside was introduced as an expedient against two conflicting economic pressures: the effects of surplus production on world markets and the need to maintain domestic price levels (Defra, 2005).

The environmental benefits of the scheme are secondary to its economic impacts. The increasing production of bio-energy crops as a result of the set-aside scheme offers potential synergies with other pro-environmental behaviours (such as substituting bio-energy for fossil fuels). The set-aside scheme encourages bio-diversity (rare breeds of bird for example) and there are set-aside 'strips' to reduce water pollution with reduction in nitrate leaching (Defra, 2005).

One area of potential environmental concern is the use of herbicide on naturally regenerated set-aside. With naturally regenerated set-aside it is weed flora that delivers the environmental benefits. However, under Good Agricultural and Environmental Condition 11 ('GAEC 11') farmers have a legal obligation to control certain weeds (Defra, 2006). Use of any non-selective herbicide, such as glyphosate, kills all plant life, preventing plants from setting seed and reducing cover for wildlife (Defra, 2006). This has particularly deleterious effects on ground-nesting birds, who risk being exposed to predators, and on less mobile animals, leading to a loss of food supply (Defra, 2006). There is also the problem of herbicide spray drifting into the surrounding environment, effecting hedgerows in particular. Little research has been undertaken to quantify the effects of these problems (Defra, 2006).

When set-aside land is used to grow non-food crops, such as oil-seed rape for bio-diesel, normal management rules for set-aside do not apply. Though farming practices become more environmental in the sense that increased growth of bio-fuels helps contribute to lowering carbon emissions, many of the problems of diffuse pollution and spray drift mentioned in the paragraph above are increased (Defra, 2006).

The acceptance of set-aside differs considerably between arable farmers and dairy farmers. Very few dairy farmers have set aside more land than they need to, while arable farmers can use set-aside to withdraw less fertile land from production. The early trading in entitlements for set-aside has shown this, with most forward deals involving intensive dairy farmers keen to reduce or remove their set-aside requirements (Defra, 2006).

Legacy

One potential legacy from the scheme is the implementation of tradable entitlements for set-aside in the future. Another potential legacy is the developing role of farmers as land managers as well as industrial producers.

Regulatory Tools:

The Common Fisheries Policy – Total Allowable Catches

Aims

The aim of the quota system is to ensure that fisheries can be used in a sustainable way and that member states have access to a common resource in a fair way. TACs are an instrument for limiting the removal of fish from shared waters and are intended to conserve fish stocks.

Delivery Mechanism

Setting total allowable catches involves the fixing of maximum quantities of fish that can be caught from a specific stock over a given period of time. Member states share fishing opportunities (in the form of quotas) amongst their fishermen. This process requires cooperation among the various parties enabling those involved to come to an agreement regarding TACs and on how quotas will be allocated.

Background

Total Allowable Catches (TACs) were introduced in the European Community (now the European Union) as part of the Common Fisheries Policy (CFP) in 1983. The CFP was introduced to regulate access to EU fish stocks, classed as a common EU resource, to ensure conservation of these stocks.

Who Leads and Who Delivers

TACs are set for the main commercial species and are established each year on the basis of scientific

<p>advice from the Advisory Committee on Fishery Management of ICES (International Council for the Exploration of the Sea). They are divided into fixed percentage quotas which are allocated to each state. For some stocks the percentage allocation is adjusted in favour of countries considered most dependent on fishing (Defra, 2000).</p>
<p>Target Audience</p> <p>The target audience are principally fishermen, but also enforcement agencies and stakeholders in the fishing industry within the EU.</p>
<p>Timescale of Change Targeted</p> <p>For many fishermen, a quota system was already common practice prior to the Common Fisheries Policy. For regulatory and scientific bodies, a longer-term behaviour change was required to ensure that the TAC system was implemented and enforced effectively.</p>
<p>Outcomes</p> <p>For fishermen that have large quotas and a good area in which to fish, TACs work well. However, interviewees from the policy team noted the problem of smaller quotas giving rise to a tendency to bypass the policy (by landing fish illegally), as well as increasing the volume of discards from vessels. The policy team estimate that 26% of fish caught are discarded before being landed.</p>
<p>(Cost) Effectiveness</p> <p>The high cost of the monitoring and enforcement of the TAC and quota system may not make it the most cost-effective way of restricting fishing opportunity. In addition to reservations about costs, there are serious concerns about the extent to which the CFP has delivered against its own primary objective of conserving EU fish stocks. Over the past 30 years the proportion of healthy stocks has gradually declined and the proportion of 'at risk' stocks has increased (Prime Minister's Strategy Unit, 2004).</p>
<p>Links to Change Theory</p> <p>The quota system works on the basis that the fisheries are a mechanistic system which can be regulated with clear 'command and control' policy measures. Ultimately TACs represent mandatory limits rather than working agreements; infringements can be penalised.</p>
<p>Lessons Arising</p> <p>Catch quota management has not always been successful in controlling exploitation and optimising economic goals. Not all stocks have been maintained at steady levels, with many areas experiencing decline or collapse.</p> <p>There are two critical success factors to quota management. Firstly, setting inappropriate TACs for a fishery can cause the failure of the quota management process. Secondly, robust monitoring is imperative if quotas are to be effective, ensuring that the actual catches are kept at or below the recommended TAC. Regardless of additional surveillance requirements, catches still often exceed the TAC in some fisheries. The multi-species nature of fisheries, and the consequent need for TACs to be set for a number of species which are captured concurrently, makes enforcement more difficult. Such a management process can be impractical for fishermen and can lead to illegal landings and the discarding of otherwise saleable fish because the quota for that species has been reached. Non-compliance is also a major issue, with strong incentives for fishermen to fish illegally or misreport landings (Prime Minister's Strategy Unit, 2004).</p>
<p>What Could Be Done Differently?</p> <p>There are a number of inherent problems with the TAC system. As mentioned above, because the TAC system is an indirect method of control it cannot eliminate the practice of large quantities of fish being discarded (Defra, 2000). It is also noted that there was a distinct lack of stakeholder involvement at the fisheries science level. Stakeholders need to be more involved in translating scientific advice into management decisions in order to increase confidence in the system (Prime Minister's Strategy Unit, 2004).</p> <p>A recent report has suggested that the fishing industry needs to be given a greater role in coordinating information priorities (Defra, 2005a).</p>

Legacy
<p>The 2002 Common Fisheries Policy review process highlighted that the UK and EU fisheries management system was not meeting its primary aim of rational and sustainable exploitation of fish stocks (Defra, 2005a).</p> <p>Command and control policies have not worked in what is a complex, multi-jurisdictional, policy area with mixed fish stocks. There is a need to move management structures to a more regional level (Defra, 2005a).</p>

The Green Claims Code
Aims
<p>The aim of the Code is to achieve a common consensus and ground rules on labelling and products that make green claims, without using direct regulation. This consensus would then stop inaccurate claiming and encourage the use of sound information on products.</p>
Delivery Mechanism
<p>Adherence to the Code is voluntary, but regulators can use it as a framework. As mentioned above, attempting to establish that inaccurate claiming constitutes a criminal offence is difficult, but regulation would be unlikely to succeed in this area as it is hard simultaneously to discourage bad practice and encourage the use of good information. The legitimacy of the Code is founded upon the involvement of stakeholders in agreeing it; the effectiveness of the Code as a sanction is dependent upon market dynamics (i.e. the interactions between producer, retailer and consumer). Finally, the CBI and various retail, trading and standards bodies endorsed the Code.</p>
Background
<p>The Green Claims Code was designed to address the problem of careless ‘green hype’ advertising in the late 80s and early 90s. In 1996 a consultation was begun with stakeholders about a code of guidance. Before the Green Claims Code was introduced the Government had been acting on individual scenarios and individual complaints; enforcing trading standards in a vague area like product labelling was difficult. The Code first entered into practice in 1998.</p>
Who Leads and Who Delivers
<p>Consumers and producers can use the Code as a yardstick, with regulators able to use the Code to guide their judgements.</p>
Target Audience
<p>The principal target was producers and businesses, but the Code also aimed to provide a yardstick for consumers and regulators.</p>
Timescale of Change Targeted
<p>The behaviour change aspect of the Code involved persuading market players to conform to the standards laid out in the Code in order to avoid bad publicity and a fall in sales or potential legal action either from consumers or competitors. This meant that the Code took time to set up, but the process has the benefit of consumer-producer feedback, and uses market dynamics in place of compulsion. As noted above, businesses can also be naturally risk-averse (see the UK ETS study above), which also implies a longer timeframe for policy introduction.</p>
Outcomes
<p>In the first year of the Code (1998), there was a fall in the overall number of environmental claims made on products, though this was concentrated in specific product categories such as aerosols, detergents, paints and varnishes. By contrast, environmental claims rose in product groups such as light bulbs, bin liners, toilet rolls and sanitary protection. Overall, the number of ‘CFC-free’ claims fell, as did the number of ‘biodegradable’ claims, but the use of vaguer terms such as ‘environmentally friendly’, ‘recyclable’ and ‘natural’ still remained difficult to counteract (NCC, 1999).</p>

(Cost) Effectiveness
It is difficult to quantify financial savings made by the Green Claims Code. However, only tens of thousands of pounds were spent on administration, the same on monitoring the market, and the same on the printing and circulating of the Code. The positive impact of the measure, with the number of false claims decreasing, would suggest a good return for this outlay (NCC, 1999).
Links to Change Theory
There was a robust participatory process when formulating the Code. The fact that the Code was voluntary encouraged shared ownership of the issue, rather than a top-down command and control scenario.
Lessons Arising
The fact that the Code is voluntary allows an amount of flexibility when dealing with cases of inaccurate labelling. Such flexibility is useful because direct regulation has not always been effective when applied to products, standards and marketing. The Code has helped to achieve a consensus in industry, and provided an iterative process with stakeholders (see the UK ETS study as an example of addressing a problem collaboratively as part of an iterative process). One member of the Defra policy team interviewed for this study argued that had the Code been mandatory the extent of stakeholder involvement might have been more limited and the benefits of flexibility would have been lost. However, there are drawbacks in the Code's status as a voluntary tool. In a 1999 review the National Consumer Council stated that the code "lacks a strong sanction, and this is a serious barrier to its effectiveness" (NCC, 1999: 34).
What Could Be Done Differently?
An international standard was developed at the same time as the Green Claims Code and though there was no significant conflict between the two this did cause confusion and require a revision of the Code. Subsequently, four or five sectors were identified as having problems with following the Code, so more sector-specific guidance was brought out, following further consultation with trade bodies.
Legacy
The Code is still current today, supplemented by on-line guidance for practitioners, including some specialised advice for some sectors where there have been problems in the past.

The Market Transformation Programme
Aims
The aim of the MTP is to support the development and implementation of UK Government policy on sustainable products. The MTP takes a life-cycle approach to reducing the environmental impacts of products, by collecting information (stock, sales, usage and resource consumption data on household and industrial products), building evidence (modelling how products will evolve and predicting market trends) and working with industry and other stakeholders (agreeing and implementing action plans, building a consensus). The MTP also contributes to a number of other Government policies and programmes, the Business Resource Efficiency and Waste (BREW) programme being one example.
The MTP aims to lift the barriers and constraints to the diffusion into the market of the most energy efficient products available. The strategic focus is to improve the availability, take-up and use of products that are more energy-efficient and less environmentally damaging over their life-time. In the inception statement of the MTP the Government stated that the MTP would involve a holistic approach that looked at the "underlying market trends and environmental, technological and behavioural factors which determine the scope for achieving beneficial changes over a period of time" (DETR, 1997).
Delivery Mechanism
The Programme provides consensus-based information to its target audience and stakeholders, gathering evidence and quantifying the impact of products. Plans are developed for how various policy measures could best transform the market for each major product type. Estimates of the environmental impact savings that could be achieved through the proposed mix of policies also aid the prioritisation of policy.
The Programme works with stakeholders to publish reliable information about the environmental

performance of products as well as current and anticipated future performance standards and seeks to establish the role that innovation could play in achieving policy goals.

The MTP facilitates the delivery of effective Europe-wide standards via measures such as mandatory energy labelling, mandatory energy efficiency requirements and voluntary industry agreements. Energy labels provide information about the energy consumption and performance of domestic fridges and freezers, washing machines, electric tumble dryers, combined washer-dryers, dishwashers, lamps, air conditioners and electric ovens. Minimum performance standards aim to remove inefficient boilers, domestic fridges & freezers and fluorescent lamp ballasts from the market. Voluntary Industry Agreements with product manufacturers aim to improve the energy performance of digital TV services, external power supplies, televisions and DVD players and remove inefficient domestic washing machines and dishwashers from the market. The Energy Using Products Directive aims to promote sustainable development through providing a framework for the setting of eco-design requirements for energy using products before these are placed on the market. The voluntary Energy Star Scheme promotes energy efficient office equipment such as personal computers, monitors, fax machines, scanners, photocopiers and printers.

Background

The Market Transformation Programme (MTP) supports sustainable consumption and production, in particular policies and delivery programmes which encourage competition and innovation in the environmental performance of traded goods and services. The MTP is integral to the UK Government’s strategy on Sustainable Development, underpinning the product policy aspect of the framework for Sustainable Consumption and Production.

A key element of the Government’s Sustainable Development Strategy is to reduce CO₂ emissions, a quarter of which come from the energy sector (HM Government, 2005). In turn, three quarters of electricity consumed by households in the UK comes from domestic appliances and lighting. The amount of electricity consumed in this area had doubled since 1970 and was predicted to continue rising, mainly due to increased demand for domestic products. It was felt that increasing demand for such products was outpacing the rate of technological innovation. Following a consultation paper issued by the Environment & Business Division of the then DETR, in October 1997, Energy Efficient Consumer Products: A ‘Market Transformation’ Strategy for More Sustainable Consumption, the MTP was launched.

The MTP marks an increased focus on products (rather than on processes) in regulation and policy-making. As was highlighted in the 2000 evaluation report of the MTP the principal focus of environmental policy development during the 80s and 90s had been upon the regulation of processes, examples including the Large Combustion Plant Directive (LCPD) and the Integrated Pollution Prevention and Control Directive (IPPC) (Chesshire, 2000). The MTP also tapped into the increased emphasis on energy efficiency in the late 80s and early 90s, demonstrated by the establishment of the Energy Saving Trust in 1992, and the Home Energy Conservation Act of 1995.

Who Leads and Who Delivers

The MTP is managed by Defra’s Environment, Business and Consumers (EBC) division through a consortium of contractors. The lead contractor is AEA Technology, working with the Building Research Establishment, Intertek Research and Testing Centre, Consumer Research Associates and a growing number of other experts as required. The Market Transformation Advisory Group (MTAG) advises Defra on the direction, operation and management of the Market Transformation Programme. MTAG meets on a quarterly basis.

The MTP holds regular stakeholder meetings to develop policy strategies for domestic and commercial products.

Target Audience

The MTP targets both the supply and demand-sides of the market, covering a range of product sectors including: lighting; white goods; domestic cooking appliances; electronics; space heating and water heating; office equipment; other non-domestic products and equipment (such as commercial refrigeration and electric motors).

Timescale of Change Targeted

The emphasis of the MTP is on long-term progress, looking to change the behaviour of producers by lifting barriers to production of more resource efficient products.

Outcomes

In 2005, the UK saved an estimated 1 TWh (Tera Watt-Hour, or one trillion watt hours) from mobile phone power supplies – enough to power over 200,000 homes. By 2010, the increased use of condensing boilers will reduce carbon emissions by an estimated 500,000 tonnes/year. Preparatory work by the MTP helped to introduce legislation which has increased the sales of condensing boilers from 8% of the market share to 85%. The MTP influenced the development of non-domestic lighting targets and a UK rebate programme that saved 1.3 TWh/year of electricity. The MTP made a significant contribution to the development of Enhanced Capital Allowances for commercial refrigeration products leading to an increase in the uptake of energy efficient equipment in the UK. The MTP's influence on the eco-design of digital TV technology has been a major factor in achieving an estimated energy saving of 1 TWh/year in 2005 (MTP Case Studies, 2005).

(Cost) Effectiveness

Based on existing policies introduced since 2000, it is expected that the MTP will save 7 TWh/yr of electricity in 2010 (used in CCP evaluation).

A detailed impact assessment is due in June 2006 to establish the actual savings; Stakeholder views (including industry); and the cost effectiveness of programme.

Links to Change Theory

Industry is seen as an integral part of the policy process, rather than as a passive target. It is also interesting that the MTP was established essentially to be a programme of research and analysis, identifying the best options for decisions on policy instruments and not in itself an instrument for delivering policy commitments. Finally, the methods used by the MTP include providing better product information to consumers, thus closing feedback loops between different actors in the marketplace.

Lessons Arising

The MTP demonstrated the need for better publicity and communication of the policy itself (see HM Government's Headline SD Indicators). The MTP helped to highlight some of the practical problems with labelling, including strain on Trading Standards Officers and manufacturers continuing to produce lower quality goods for the mass market.

What Could Be Done Differently?

The 2000 evaluation report noted that several stakeholders interviewed as part of the evaluation process wanted the MTP to be more user-friendly and more specific to the needs of producers. The evaluation also highlighted the need to work with 'policy' actors, not just 'market' actors (Chesshire, 2000). Members of the current policy team interviewed noted a lack of evaluation of the programme's past achievements. A methodology to look more closely at impacts is now being developed.

The 2000 evaluation report states that the "need for effective linkages with other policies and programmes - especially those concerned with delivery - remains a crucial one" (Chesshire, 2000: 32). Individual policy measures inter-relate and bring about combined effects; they must be considered in combination. The evaluation also stated the need for a 'package' of measures to more effectively transform the market, suggesting fiscal changes – such as lower VAT rates on more efficient appliances (as in France) - and radical reform of the tax system to propel technological innovation and the market diffusion of clean and efficient products (Chesshire, 2000).

Legacy

The programme is ongoing.

Social/Voluntary Tools

BioWise
Aims
The key aims were to improve the competitiveness of UK industry through the use of biotechnology and to support the development of the UK biotechnology supplier industry.
Delivery Mechanism
BioWise utilised a range of delivery mechanisms including independent advice, publications, information events, information provision to biotechnology suppliers and funding for user-led projects. The 'Demonstrator Projects' had a £3m budget for funding collaborative innovative projects with UK industry, encouraging the commercial application of novel biotechnology solutions.
Background
BioWise was a major UK Government Programme funded by the DTI (£14.4m, plus £3 million for funding projects).
Who Leads and Who Delivers
BioWise provides information and support to industry.
Target Audience
The target audience was UK industry.
Timescale of Change Targeted
The nature of behaviour change targeted was very much long-term, looking to bring new and sustainable technology into an industry and encourage the growth of the bio-industry sector.
Outcomes
The surveys found that knowledge and awareness of biotechnology significantly increased amongst suppliers and potential customers of biofuels, along with incidences of implementation and active consideration of industrial biotechnology by manufacturing companies. Awareness of relevant industrial biotechnology applications amongst 'supported' businesses increased from 17% to 77%. Business viewing biotechnology as being relevant within their sector increased from 19% to 67%. Up to 59% of businesses are now more inclined to implement industrial biotechnology in the future (SQW, 2004). It should be noted that these success measures are attitudinal and intentional, rather than demonstrating 'hard' achievements caused by BioWise.
(Cost) Effectiveness
A round of evaluation surveys have been carried out on BioWise. Both users and suppliers rated the effectiveness of activities under the programme as 'above average/well-above average' and found BioWise information relevant and up to date (Synovate, 2004). Beyond the demonstration projects, BioWise users viewed the workshops and helpline advice as being the most effective aspects of the scheme while suppliers rated the workshops and seminars most highly. There have been tangible benefits (including increased competitiveness) to most suppliers with most reporting additional investment as a direct result of their involvement. BioWise has also increased the likelihood of further bio-technology business accruing in future, by building trust and forging new business relationships. The funded projects have also been well received by academics and were seen to be a good way of increasing technology transfer from academia to industry (Synovate, 2004).
Links to Change Theory
There are no mutual obligations with BioWise, the information is provided and industry (both potential users and suppliers of biotechnology) decides whether and how to act upon it (See Energy Efficiency Advice Centres below).
Lessons Arising
According to feedback from the surveys BioWise has been successful in increasing awareness of the potential benefits of industrial biotechnology amongst potential users of the technology. BioWise

became a more popular source of information amongst ‘user’ businesses, moving beyond being a source of initial advice. BioWise also created a positive attitude towards industrial biotechnology and has encouraged manufacturers to implement industrial biotechnology. Although only a minority of suppliers have seen an increase in sales from BioWise, a majority had benefited from access to potential customers (Synovate, 2004).

Businesses that have had contact with BioWise are less likely to be of the opinion that there is no need to introduce new technologies (Synovate, 2004). Evaluation reports suggest there is a need for continued awareness raising (particularly in conservative/less pro-active sectors/firms) and that the UK supply base has neither the credibility or resources to undertake this, concluding that there is a strong case for increased public investment in this area (SQW, 2004).

What Could Be Done Differently?

Awareness levels of BioWise and biotechnology tended to be higher amongst larger and well-established businesses and companies with ambitious growth objectives. Information and support to businesses via the scheme could have been adapted on a sector by sector basis (similar to the Green Claims Code). There was also a need for better follow-up and collation of data and feedback from participants on the services provided as well as more of a partnership approach to scheme design and delivery (SQW, 2004).

Legacy

A majority of BioWise users felt the initiative had helped contribute towards and raise the profile of their company’s corporate responsibility. Biotechnology suppliers felt they had been able to reach a more targeted market (Synovate, 2004). BioWise has helped to inform the work of the Industrial Biotechnology Task Force and influence future policy. A Knowledge Transfer Network for industrial biotechnology has been suggested in the evaluation reports, given the relative success of BioWise (SQW, 2004).

The total number of biotechnology companies increased from 450 to 486 between 2001 and 2002, despite a drop in available finance, complemented by substantial increases in industry revenues and research and development budgets, suggesting the emergence of a new market that BioWise has helped contribute towards. The UK has Europe’s largest biotechnology sector employing nearly 26,000 people, including 11,500 with research and development functions (DTI, 2004).

Environmental Action Fund (EAF)

Aims

EAF in its current form aims to enable and empower Voluntary and Community Sector (VCS) organisations to carry out initiatives that help meet the Government’s Sustainable Consumption and Production Strategy by promoting and supporting pro-environmental behaviours within and through community and interest groups. This is done through project funding and support. In earlier forms (pre 2005) EAF aimed to support a number of priority areas (for example in the 2002-05 round EAF focussed on work promoting a) biodiversity and b) understanding and awareness of Sustainable Development).

Delivery Mechanism

The groups are given support as well as funding to deliver environmental improvement projects. EAF’s monitoring procedures allow for feedback to the groups from Defra and a positive feedback role from the groups back to Defra. Defra works with each group to help formulate an annual work plan, making sure outcomes are explicitly stated. A constructive working relationship with Defra is encouraged and in some cases project management support is provided. Defra gives constructive criticism, provides feedback and helps to identify new opportunities for the organisation or group. The quarterly reports provide the framework for this support activity.

Background

The Government launched the EAF in 1992 to assist voluntary organizations in England in work that supports Government's environmental objectives. Ministerial decisions on the fund are exercised under section 153(1) of the Environmental Protection Act 1990 (as amended). The fund's priorities and delivery methods have varied over time, but it has always been a fund exclusively for VCS organisations, and has always sought to meet Government sustainable development objectives.

Who Leads and Who Delivers

Voluntary and community groups have to put forward bids for project funding against EAF priorities and criteria. Successful applicants are then funded to deliver projects, whilst reporting back to Defra.

EAF projects are seen by Defra as more than a delivery mechanism. Their role developing the Sustainable Consumption and Production (SCP) evidence base is also significant. According to members of the policy team, their role as pilots and exemplars of different ways of promoting and supporting more sustainable behaviours within and through community and interest groups is at least as important as the services that are delivered.

Target Audience

The immediate target audience are voluntary and community sector (VCS) groups. The 'end customers' are those communities of interest within and through which funded groups work. A range of groups can benefit from the EAF, at a range of levels. For instance, benefiting from 2002-08 EAF grants have been: the National Federation of Women's Institutes (at the top of a pyramid of voluntary action); Peterborough Environment City Trust (working much more closely at grass-roots level); Green Alliance (looking at waste streams and lobbying at a high level); Marine Stewardship Council (working with food producers, schools and LEAs on school food procurement and whole school communities).

Timescale of Change Targeted

EAF aims to empower voluntary groups to foster change amongst community and interest groups. Grants are for a maximum of three years, but the anticipation for 'successful' projects is that either a) this funding period will provide sufficient stability for funded groups to develop longer-term funding strategies to enable their work to continue; or b) change will have been successfully embedded or mainstreamed such that the project does not need to continue as a separate funded entity. Therefore the change in behaviour that groups encourage could potentially be long-term.

Outcomes

In earlier versions of EAF, which were characterised by a diverse and diffuse range of recipients it is difficult to identify cross-fund (programme level) outcomes (CAG, 2005). However, in the 2002-05 round, CAG reported that a "phenomenal amount of activity was undertaken as a result of EAF funding, encompassing training, education in schools, participative project delivery, information provision, website development, research networking and strategic development" (CAG, 2005: 6). According to members of the policy team, for the 2005-08 round most projects are on track to meet objectives for their first year.

The 2005-08 EAF has tighter requirements on outcome reporting, and Defra have commissioned an external evaluation programme to run alongside the funded projects. According to members of the policy team, in addition to this programmed research it has become apparent that many of the EAF projects would benefit from extra support to enable them to self-monitor more effectively. Defra are currently working towards securing additional research to support and advise groups to put into place robust processes to capture behaviour change and the actual impacts of change.

(Cost) Effectiveness

The 2001 review of EAF focused on process and administrative concerns from prospective and actual applicants. The review noted the lack of strategic focus within EAF, and how other, larger funds (e.g. the Landfill Tax Credit, the New Opportunities Fund, the Single Regeneration Budget, the European Social Fund, Groundwork), increasingly impinged on its remit (DETR, 2001). The review deemed that the cost and process of administering the EAF up until 2001 were considered to be adversely

disproportionate to the size of the overall ‘pot’ and the amounts awarded (DETR, 2001). Cost-effectiveness, however, was not considered in terms of projects’ achievements.

To address these concerns, the 2002-05 round of EAF featured priority areas that were more focused than hitherto, and fewer – but larger and more strategic projects (the ‘biodiversity’ funding stream in particular was closely linked to the new England Biodiversity Strategy. The ‘understanding and awareness of Sustainable Development’ stream sought to fund projects that were closely linked to emerging departmental priority areas). As outlined above, the 2005-08 EAF is more closely linked to Departmental priorities, being focused on Sustainable Consumption and Production.

EAF continues to draw in substantial amounts of non-public sector match funding, including in kind donations and volunteer time – each project pulling in at the least same amount of external funding as the EAF grant, according to members of the policy team.

Links to Change Theory

EAF devolves responsibility to local and community organisations, ensuring that funded projects are designed for delivery in a local context by those who will be responsible for their effective delivery. There is also an element of co-production, with Defra involved in improving the output of each group.

Lessons Arising

Members of the policy team stressed that it is important that both funders and funded organisations are clear about the scope and aims of the programme and individual projects. The EAF experience supports the idea that it is more effective to work with organisations that have access to social networks, or interest-based networks, and have expertise, influence, capacity and credibility.

Members of the policy team noted a need to ensure programme aims and structures that maximise what is available from the variety of groups that exist. The VCS landscape is increasingly complex, no longer comprising traditional ‘charities’ but social enterprises, different types of partnerships, independently funded university departments etc.

What Could Be Done Differently?

The 2001 evaluation of the EAF noted the need to improve evaluation of outcomes and impacts. There remains a lack of evidence as to the end impact of funded activity, making quantifiable outcomes hard to find, though this is a problem wider than the EAF (DETR, 2001). The evaluation of the EAF in 2005-08 aims to overcome this. There is also more scope for integration, both between funded projects and between Defra itself and funded projects (DETR, 2001).

A 2005 CAG evaluation report noted that the policy framework changes mid-way through the policy had a detrimental effect on projects and that the scheme lacked emphasis on evaluation and review. The report concluded that it was better to tie the aims and objectives of the EAF to departmental objectives - this was more the case in round 02-05 - funding a diverse range of groups within a more unified framework, linked to a core Defra priority (CAG, 2005). This has been addressed in the current round, with the aims tied into the Governments’ strategy for Sustainable Consumption and Production and other types of bodies (non-VCS) that help tie the objectives of the EAF to departmental objectives, being considered in the 2005-08 round. Members of the policy team also felt that certain processes or mechanisms for maintaining productive working relationships and effective project delivery could be refined.

Legacy

Members of the policy team stated the desired legacy of the 2005-08 EAF as, firstly, a selection of communities and interest groups behaving more sustainably as a result of VCS groups’ engagement, enablement, encouragement and exemplification, and secondly, a considerable evidence-base being fed into policy-making about what works (and what doesn’t work) under different circumstances when promoting behaviour change.

The legacy of earlier rounds of the EAF is less clear, with more emphasis being placed on the

deliverables under the period of funding. For the 2002-05 round some groups have continued similar projects under different funding; some groups/projects continued under new EAF or Natural England funding schemes; some groups planned for projects to wind down after their objectives had been achieved; some groups' projects were embedded into wider initiatives, or by other bodies; while some projects (and groups) were overtaken by events.

Members of the policy team noted that in general a large number of projects in the UK are now on a sounder financial footing and have been empowered to change behaviour.

Energy Saving Trust – Energy Efficiency Advice Centres

Aims

The overall objective of the Centres is output-based, with the end-goal of creating a respected and widely-utilised network of Advice Centres that encourages households to understand and then take action to reduce the negative environmental impact of their energy use.

Delivery Mechanism

The fundamental delivery mechanism is the Energy Efficiency Advice Centre itself; each Centre is independent and locally accessible. One key tool for the Advice Centres is the HEC (Home Efficiency Check), a questionnaire for customers that assesses their home and lifestyle and then provides customised information on actions they can carry out to improve their home's energy efficiency and reduce the levels of energy they consume.

The Centres offer a range of services including: training for practitioners who interact with householders (e.g. health visitors); presentations to groups such as schools and community groups; media work to raise public awareness about the work that the Centres carry out; home energy check visits; and an 0800 phone helpline. The Advice Centres also target the supply-side of the domestic energy market, undertaking partnership building with relevant organisations such as retailers and installers.

Background

In 1993 the Energy Saving Trust set up 30 Local Energy Advice Centres across the country. By 2005, these Centres had developed into 46 Energy Efficiency Advice Centres, plus a pilot of three Sustainable Energy Centres; in total these Centres employ around 450 people.

Before the establishment of the Energy Saving Trust and the Energy Efficiency Advice Centres no network was in place to support domestic end-users and encourage households to reduce their levels of energy use. The Centres were designed to help end-users: to understand the negative environmental impact of their energy use; be informed and educated about the potential measures they could take to reduce energy use; and have a reliable and local source of information that they could consistently turn to.

Who Leads and Who Delivers

The Advice Centres provide as much information and support as possible without being able to offer any significant incentives or penalties. The Advice Centres are independent of Government; this can help them to be seen as more politically neutral, but they also provide a link between customers and energy suppliers which would not otherwise exist. Most importantly the Centres represent a single point of contact and a local presence.

Target Audience

The Energy Efficiency Advice Centres target households in the UK. The aim of the Centres is to reach consumers who are apathetic about, or simply unaware of, domestic energy consumption issues.

Timescale of Change Targeted

The Advice Centres look to achieve long-term change, informing and empowering people to live their lives more sustainably, principally by undertaking energy efficiency measures in their homes in the short-term, but also by changing their household energy behaviours in the long run.

Outcomes
Since their inception in 1993, the Centres have handled over 7 million customers. The figure for 2004/5 is in excess of 900,000 customers. 35% of homeowners are aware of the Advice Centres (Jigsaw Research cited in Darnton, 2004).
(Cost) Effectiveness
The 2004/05 round of evaluation calculated the average saving per customer was 50kg of carbon per year, at an average cost of £164 per tonne of carbon saved, compared to the do-nothing scenario.
Links to Change Theory
The target audience are empowered with information in order to change their environmental behaviour. The Centres are very much a supporting resource, with the onus on customers to deliver the changes in energy use required.
Lessons Arising
<p>The network of Advice Centres has evolved in line with political changes. At its inception, after the Rio Earth Summit, the network's remit was to influence the market, with most services outsourced. Since 1997, the service has become more target focused, looking at cost-effectiveness and impact assessment. The areas of activity of the Centres have also changed in this time, from social/educational measures to help the 'fuel-poor', to more action-oriented measures to help the 'able-to-pay' group of customers. Tangible outcomes are now delivered, with a higher level of pro-active contact with the public. Though this is not necessarily a negative development, it has meant that soft measures that are difficult to analyse and evaluate, with less tangible outcomes, are falling down the list of priorities – awareness-raising and relationship building with partners being one example.</p> <p>Another important aspect of the delivery of this policy tool, that has both advantages and disadvantages, is the fact that the Energy Saving Trust only partly funds the Advice Centres. According to members of the current policy team at the Energy Saving Trust this causes problems in that other sources of funding, such as the respective local authority or funding from the Energy Efficiency Commitment, may come with different agendas or aims. There is also often overlap with other sources of funding or policy tools, such as Warm Front, but the fact that money from a policy tool aimed at the supply-side of the market, the Energy Efficiency Commitment, is used to encourage a change in behaviour from the demand-side of the market, does suggest a more systems-based approach to the issue of domestic energy consumption.</p>
What Could Be Done Differently?
Members of the policy team at the Energy Saving Trust felt the network needed to increase capacity and reach a larger audience. This should be accompanied by efforts to encourage greater conversion from advice to action. Because the Advice Centres operate in a semi-autonomous manner there is considerable variation in the experiences of users (Darnton, 2004).
Legacy
Building on the cost-effective carbon savings achieved by the network of Energy Efficiency Advice Centres, the Energy Saving Trust is planning to launch a Sustainable Energy Network. This combines advice on energy efficiency with information and support on renewable energy and transport advice, suggesting a more holistic approach to energy reduction and encouraging pro-environmental behaviour. The Network also places an additional emphasis on infrastructure provision and supply-side development. The Network brings together existing and new work at the local, regional and national levels. Ultimately the Sustainable Energy Centres will help to achieve the Government's stated aim of moving towards a low carbon economy.

Public Sector Food Procurement Initiative (PSFPI)

Aims

The PSFPI has five key objectives: to raise production and process standards; to increase tenders from small and local producers; to increase consumption of healthy and nutritious food; to reduce the

environmental impacts of production and supply; and to increase the capacity of small and local suppliers to meet demand. Related objectives include increasing demand for organic food, increasing choice for ethnic minorities, and efforts to reduce waste and improve working conditions for catering staff.

Delivery Mechanism

The PSFPI aims to create widespread understanding of the importance of sustainable procurement through the development of tools and guidance on how suppliers and procurers can meet its objectives. On-going training is used to improve performance across the public sector in delivering the PSFPI's aims, for instance through regional training workshops in 2004, 2005 and 2006. Best practice case studies are published on Defra's website, while Government Offices for the Regions (GORs) and Regional Development Agencies (RDAs) are encouraged to involve regional and local newspaper editors in selling the PSFPI within their communities via good media coverage.

Suppliers are provided with advice and information on how to identify public sector opportunities and how to approach organisations and open discussions. Purchasers, food processors and manufacturers are given information on the benefits of buying healthier and sustainably produced food products, to promote successful projects and build up networks for disseminating advice and best practice. The PSFPI also informs consumers of the benefits of public procurement of healthy and sustainably produced food products and publishes case studies to encourage other public bodies and suppliers to embrace the PSFPI and related Government initiatives. As part of the PSFPI Defra has published a Catering Services and Food Procurement Toolkit.

Overseeing the delivery of the PSFPI is a Food Procurement Implementation Group, which brings together representatives from Defra's food commodities divisions, public sector bodies that are major buyers of food, Government Offices for the Regions and the Sustainable Development Commission. It has funded regional workshops and pilot projects, disseminated best practice examples, case study material, and practical guidance including toolkits and encouraged Government departments to implement sustainable food procurement action plans.

The Group works with the Sustainable Development Commission, Sustain, the Soil Association and other interested stakeholders to learn from and use their research on sustainable food procurement.

Background

Some £2 billion is spent by the public sector on food and catering services in England per year (NAO report "Smarter food procurement in the public sector, 2006²c). The PSFPI aims to use this buying power to help deliver the principal aims of the Government's Strategy for Sustainable Farming and Food in England.

The PSFPI was launched in August 2003; it targets the demand-side of the food market (by encouraging public sector bodies to procure food in a manner that promotes sustainable development) and the supply-side (encouraging more small and local farmers, producers and suppliers to compete to supply public bodies with food). The PSFPI also covers other sustainability issues related to the procurement of food and catering services.

Who Leads and Who Delivers

Defra leads in providing the guidance, training and information to encourage behaviour change amongst both suppliers and buyers in the market, but it is down to public sector bodies who procure food to deliver the changes in their practices, and for producers to take advantage of the information the PSFPI disseminates.

Target Audience

The PSFPI targets actors right across the food supply chain, including suppliers (farmers and producers looking to sell their products), purchasers (public sector buyers), food processors and manufacturers, and consumers.

Timescale of Change Targeted

² NAO report published at <http://www.defra.gov.uk/farm/sustain/procurement/nao-smarterfood.htm>

The PSFPI hopes to achieve a long-term change in behaviour, for all public sector buyers to pursue the PSFPI's objectives in their procurement of food and catering services and for domestic producers and suppliers to be able to meet these requirements.

Outcomes

It is especially difficult to judge outcomes as the PSFPI also complements and supports other sector-specific Government initiatives, such as policies targeting school food and hospital food. There is also a great deal of related activity from NGOs who, like the Soil Association, are running their own initiatives such as Food for Life. PSFPI funding has helped Government Offices in the Regions run workshops for buyers and suppliers and pilots to develop the supply-side.

(Cost) Effectiveness

To date there has been no comprehensive evaluation undertaken, though a National Audit Office study into public sector food procurement (published in March 2006) found that while much has been achieved, much still remains to be done. This view is reflected by members of the policy team interviewed for this study who would like more public bodies to become actively involved in delivering PSFPI objectives, though there are encouraging examples that demonstrate a continuing spread of best practice. The PSFPI has led to a wide range of good practice case studies from all over the country, from Primary Schools to Prisons, which in turn are used to promote the positive benefits of the policy. A range of reports on regional pilots and projects targeting the supply-side of the food chain also give some indication of progress made.

Links to Change Theory

The PSFPI resembles the traditional 'information deficit' model of change, but importantly combines this approach with other forms of support, and participatory working practices. The target audience is consistently made aware of the tangible benefits of following the PSFPI's guidance. It is notable that this procurement initiative aims to achieve whole system change, across all partners in the food chain.

Lessons Arising

The PSFPI has been successful in engaging diverse stakeholders including: the Government Offices in the Regions; farming representatives such as the National Farmers Union; food service industries; Government-sponsored bodies; senior procurement officers in key Departments and Defra's Food Commodities Divisions; and NGOs such as Sustain and the Soil Association. Positive lessons can also be drawn from the establishment of solid communications with buyers across the public sector and their suppliers, from fora such as Defra's PSFPI website, conferences, email distribution lists, meetings with Government Offices for the Regions (GORs) and NGOs.

What Could Be Done Differently?

Though the PSFPI is still in its infancy there are lessons to be drawn. Despite support of Ministers and Sir Don Curry, the architect of the Sustainable Farming and Food Strategy and chairman of its Implementation Group, the Food Procurement Unit has found it difficult to deliver on certain fronts. Members of the current policy team noted a lack of authority when enlisting the support of all Regional Centres of Excellence; when obtaining data from Government departments; and when asking Departments to publish their PSFPI action plans on the internet (a requirement of the PSFPI). Similar problems relating to a policy instrument lacking authority or 'teeth' were encountered by the Framework for Sustainable Development in the Government Estate, analysed in the other section below.

Legacy

It is too early to make conclusions as to the Public Sector Food Procurement Initiative's legacy, although it has been noted that its ultimate aim is lasting, system-wide, change.

Other Tools:

England Rural Development Programme – Rural Enterprise Scheme
Aims
The Rural Enterprise Scheme (RES) is part of the England Rural Development Programme and provides assistance for projects that help to develop more sustainable, diversified and enterprising rural economies and communities. Its coverage is wide-ranging but the primary aim is to help farmers adapt to changing markets and develop new business opportunities. RES also has a broader role in supporting the adaptation and development of the rural economy, community, heritage and environment.
Delivery Mechanism
The delivery mechanism of the RES is in the main a capital grant for funding one-off sustainable projects. There is also scope for revenue funding, for instance in supporting quality food marketing projects.
Applicants have to bid competitively for grants. As well as capital grants, a word-of-mouth effect is also encouraged; according to one member of the policy team interviewed for this study, some farmers are usually keen to talk about their RES funded projects. During evaluations, promotion of the scheme was found to be more effective if conducted on a one-to-one basis (Defra, 2003).
Background
The Rural Enterprise Scheme (RES) was launched in 2000. The RES complements wider Government policies on encouraging diversification, tourism and better quality food marketing. At the time the RES was developed, the Government was looking at a range of options which were possible under EU rural development regulations that were relevant to England, including the need for farmers to increase incomes and farm more sustainably. The RES was launched as a Scheme to encourage and part-fund rural enterprise and community projects.
Who Leads and Who Delivers
Defra supplies the capital, which is co-financed between the Exchequer and European Union. The Rural Development Service delivers the scheme. The responsibility is then with the recipient farmers to run their respective projects effectively and profitably.
Target Audience
The scheme specifically targets farmers, other rural groups including businesses (partnerships and companies) and community groups. This is a broad target audience, although uniform in the sense that all beneficiaries from the funding stream must be non public sector organisations (Defra, 2003).
Timescale of Change Targeted
The scheme attempts to encourage long-term behaviour change. The RES particularly reflects a need for farmers to become more market-oriented and move away from the perceived subsidy dependency culture.
Outcomes
By March 2003 a total of 1,872 eligible applications to the RES had been received, although this was fewer than had been expected. In terms of the funds distributed, in 2003 the largest proportion of funds (33%) was awarded to schemes promoting diversification into non-agricultural activities, and 23% into tourism and craft activities. Schemes for the protection of the environment received only 5% of the total fund (Defra, 2003).
(Cost) Effectiveness
The value of funds to be distributed by the Scheme across the period 2001-2006 was £152million. The 2003 mid-term evaluation noted the high administrative costs as a percentage of total spending, concluding that the scheme was not “administratively efficient” (ADAS, 2003: 34). The start-up for the scheme was slow, however, and foot and mouth disease also put the scheme on hold for approximately a year. In terms of the funds distributed, £40 million has been spent on diversification, with approximately 5,000 jobs being created. £24 million has been spent on tourist operations with 3,000 jobs created, and 2.2 million tourist visits generated per annum (ADAS, 2003).

Links to Change Theory
Recipients of the fund are supported financially, but are responsible for the delivery of their own projects. A primary objective is for farmers to make money from an enterprise and diversify land use, not simply supply a service or good as some farmers might be used to; this amounts to fundamental and systemic change. The RES can help to make farm business more sustainable and in turn encourage farmers to remain managers of the land.
Lessons Arising
The Scheme encourages farmers to act more like businessmen, create business plans, and identify a viable market and initiative. One member of the policy team interviewed for this study said that the capacity building aspect of the Scheme had been more important than the funding itself. Nevertheless, it should be noted that incentives to diversify work inevitably disadvantage existing rural enterprises (ADAS, 2003). One example of this is the reduced occupancy rates of holiday accommodation as a result of the increased supply of such accommodation due to projects funded by the RES (ADAS, 2003).
What Could Be Done Differently?
One consultee felt that more emphasis could have been placed on skills and knowledge transfer to complement the capital that the Government provided. The 2003 mid-term evaluation also noted the lack of formal evaluation procedures and recommended the use of a comprehensive survey of beneficiaries (ADAS, 2003). There is a need for better target setting and data collection in order to allow Defra to monitor the uptake of grants from the full range of target applicants (Defra, 2003).
Legacy
Not known

Framework for Sustainable Development in the Government Estate
Aims
The overarching aim of the Framework is to increase the contribution that all Departments make to sustainable development by: <ul style="list-style-type: none"> • setting challenging cross-Government targets in all key operational areas; • gaining clear and tangible commitments from all Departments to deliver targets; • allowing Departments flexibility in terms of the mechanisms they use to deliver targets; and • providing support to Departments through guidance and up to date examples of best practice on the Framework website.
Delivery Mechanism
The principle mechanisms are process targets; these targets provide a yardstick of performance. There is some focus on outcomes but no cost parameters are set out. There are some desired outcomes at this stage (such as alternative fuelled cars in Departmental fleets) and no focus on money or cash benefits. The Sustainable Development Commission published an annual report called 'Leading by Example, Not exactly' in December 2005 on departmental progress against Framework targets for the financial year in order to provide a more independent assessment.
Background
The Framework for Sustainable Development on the Government Estate is the main vehicle for improving the sustainable operational performance of the Government Estate. It covers all key environmental and social impacts of the running of departments. The Framework's website also contains guidance to support Departments in achieving targets.
Who Leads and Who Delivers
It is the responsibility of departments and executive agencies to deliver against the sustainable operational targets and commitments in the Framework.
Target Audience
The target audience is central Government departments. The Framework covers central Government estates, including the 19 departments and executive agencies. These departments operate on very

diverse scales, with for instance the Ministry Of Defence covering 1% of UK landmass, and the Cabinet Office occupying a few buildings mainly based in Whitehall.
Timescale of Change Targeted
The Framework sets out a list of overarching commitments that aim to achieve a more sustained change in Government in the way it manages its land and buildings. Most targets will elapse by 2008.
Outcomes
It is interesting that targets were agreed without an assessment of the potential cost implications. There was a considerable variation in departmental performance with some departments having a very good record, others a very poor one.
(Cost) Effectiveness
The 2002-04 report stated that a difference had been made in departmental thinking and acting. However, poor data, poor leadership, poor guidance and poor capacity, were still problems.
Links to Change Theory
There is little in the way of compulsion: departments are given flexibility in how they achieve the process targets.
Lessons Arising
Members of the current policy team noted how the Framework had encouraged Government departments to think sustainably and lead to some progress, but had also led, in some examples, to a tokenistic response from departments. Departments have implemented a variety of measures in response to the Framework. For instance, HM Prison Service (a Home Office executive) demonstrated a new focus on the social impacts of training prisoners, recycling and energy efficiency. Defra's Nobel House and Whitehall Place West enjoyed exemplary top-rated BREAM refurbishments. The NHS PASA (buying arm) exemplified a progressive procurement practice, while the MoD showed effective and sustainable management of Sites of Special Scientific Interest. Government departments, however, have never formally shared good practice, which in turn has had a negative impact on the Framework's effectiveness.
What Could Be Done Differently?
There was no Regulatory Impact Assessment (RIA), and accordingly no emphasis on costs (an RIA was not needed at the time the Framework was set up). Targets clearly needed to be outcome focused and fewer in number. The targets are now being adapted to correspond to the four areas of the Government's Sustainable Development strategy, and incorporate more long-term thinking to 2020 showing greater consistency and interdepartmental integration. The existing Framework could be open to criticisms of being too environmentally focused; other dimensions could have been included, such as allowing the Government to focus on its good record as an employer. There is considerable scope to create reward aspects in the Framework in order to incentivise good performance. At present the Framework has no coercive element and no financial penalties.
Legacy
The Framework is currently being reviewed in order to deliver a step change and improvement in the way the Government manages its sustainable operations. There is now considerable senior management leadership in the form of a Sustainable Operations Board, with cross Government membership. As with the Public Sector Food Procurement Initiative analysed above, the Framework has highlighted the need for leadership. There is now a push to get training courses on Sustainable Development into the National School of Government.

HM Government Sustainable Development Headline Indicators	
Aims	The key aim is to provide a set of indicators applicable to the Sustainable Development Strategy. It is also hoped that the indicators will be regarded as a mechanism for improving accountability in Government performance.
Delivery Mechanism	The principle delivery mechanism is effective communication and dissemination of the indicators.
Background	The 1992 Rio Summit put Sustainable Development on the policy map, leading to the first national strategy in 1994. There had been work on indicators previously by organisations like the OECD, but the first ever set of UK Government indicators was produced in 1996. A new strategy was produced in 1999, along with a new set of indicators.
Who Leads and Who Delivers	The Government is responsible for the formulation and dissemination of the indicators.
Target Audience	The target audience is all 'stakeholders' within society but the indicators were also expected to provide baselines for monitoring policy. This approach has influenced the selection process for the indicators and how they were formulated, in order to reach as wide an audience as possible.
Timescale of Change Targeted	The indicators and their promotion aim to change the way progress towards sustainability is judged. At the time of publication of the 1999 set of indicators, it was argued that a set of headline indicators would be as important as measures like GDP and Retail Price Index (or the Harmonised Index of Consumer Prices), creating a long-term change in how good practice is assessed.
Outcomes	During interviews conducted for this study, the indicators were described as 'ambassadors' for Sustainable Development - acting as a shop-window for all issues falling under the Sustainable Development umbrella. In turn, the dissemination of the indicators encourages cross-departmental awareness. According to members of the current policy team the indicators have also proved very effective at highlighting gaps in policy (farmland bird populations being a good example). The indicators have also been used and referred to by NGOs and local government.
(Cost) Effectiveness	Once communication was improved and the indicators were made more succinct the set of indicators could raise awareness of Sustainable Development more effectively. Current members of the policy team said that indicators can be resource intensive, but are in general much cheaper than comparable policy instruments.
Links to Change Theory	As well as monitoring performance, indicators provide a framework for increased understanding of an issue. They address the awareness-raising and knowledge element of behaviour change, not the enabling or coercing elements.
Lessons Arising	According to current members of the policy team, the leaflet containing the indicators provided a far more successful and effective reference point than the annual reports on Government performance; the leaflets could be used for wide-scale dissemination. It became clear that the indicators were only as good as the methods used to disseminate them. Initially, the website and the annual report were the only media for communication, resulting in minimal media coverage. In 2000, the Government responded to this by producing a 2-sided A4 leaflet for the media. This had a "dramatic impact", according to current members of the policy team, garnering considerable attention from the press and associated stakeholders, thus encouraging greater accountability. The strong commitment from the

Sustainable Development Strategy to the indicators was then reinforced by media coverage, both positive and negative.

A further lesson alluded to was that some negative coverage (where indicators) were not favourable) helped to bring Sustainable Development far higher up the policy agenda. The reduction in the number of indicators (currently standing at 68) has made them far more accessible.

When the indicators were first published there was an assumption that they would be drivers for change. However, there are few examples of indicators driving change; instead they represent summaries of current practices and prevailing conditions. They are essentially communicators, not guides to best practice.

What Could Be Done Differently?

Members of the current policy team saw the biggest challenge as communication. Headline indicators were updated as and when the relevant information became available. Though the indicators helped to encourage departmental integration on Sustainable Development issues, the DETR (as it was) only controlled 5 of the 15 original indicators and had to keep up-to-date with developments in areas covered by the other indicators. It was very difficult for the Department to control both the collation and the release of information.

In 2001 a decision was made, and then agreed with the Treasury, that there should be a Public Service Agreement on Sustainable Development as measured by the 15 indicators. This resulted in greater coverage of the indicators, but meant that assessment of Defra's performance on Sustainable Development was based on the indicators, despite Defra only having responsibility for 5 of the 15. Defra could not be responsible for other areas like crime or education.

Another problem highlighted by members of the current policy team was the high aggregation of indicators. Previous headline indicators were so highly aggregated that it was difficult for businesses/producers to know how to integrate sustainability concerns into their practices. Members of the current policy team noted some influence at business level, for instance with B&Q producing a corporate sustainability plan in response to the indicators.

Legacy

The communication of the indicators has been emulated by the Finnish Environment Ministry and the European Union Environment DG. Experience with the publication 'Environment in Your Pocket' led to 'Sustainable Development Indicators in Your Pocket', with a selection of indicators more resonant with the public. According to current members of the policy team, this has proved to be a far more effective communication tool and a good template for other communication tools aimed at a general audience.

Warm Front

Aims

The scheme is based around legislative fuel poverty targets. The aim is to provide both infrastructure and advice to combat fuel poverty.

Delivery Mechanism

Warm Front is a voluntary scheme. Measures are installed depending on applicability, and advice is given to the public on how to use domestic energy more efficiently (NAO, 2003). The two scheme managers responsible for administering the scheme, Eaga Partnership Ltd and TXU Warm Front Ltd network with older peoples and disability groups, the healthcare sector, rural and black and minority ethnic communities and local authorities in order to reach people who might not respond to visual media (Eaga Partnership Ltd, 2004).

Background

Warm Front, previously the Home Energy Efficiency Scheme, aims to reduce fuel poverty in vulnerable households in England by improving the energy efficiency of homes. The Scheme costs on average £150 million a year and provides grants for insulation and heating to homes in the owner-occupier and private rented sectors. Warm Front is a socially-focused programme using economic

incentives with environmental by-products. The scheme was launched in June 2002.
Who Leads and Who Delivers
Defra uses private companies to carry out the changes required in each household.
Target Audience
The target audience is people who may be at risk of fuel poverty. The scheme now focuses on the private sector – most potential victims of fuel poverty live in private housing – as the social sector is targeted by the Decent Homes Standard.
Timescale of Change Targeted
There are both short-term and long-term elements to the scheme. Insulation and heating will improve the energy efficiency of a house with immediate effect. This is then backed up by energy advice on reducing expenditure on fuel to achieve long-term behaviour change. Households are made aware that they can receive the service, before being given an appropriate package of support, followed by advice on energy saving in general.
Outcomes
One million households have benefited from new heating and insulation from the scheme in the 5 years it has been running.
(Cost) Effectiveness
303,000 households were assisted in 2002, receiving an average grant of £445 which has the potential to save each household around £150 a year through reductions in fuel bills. Given the energy savings generated by the scheme, the current policy team considers it to be cost-effective.
Links to Change Theory
Better heating and insulation is provided by Government; once that infrastructure is installed, however, it is the responsibility of the household to use it as efficiently as possible.
Lessons Arising
There are problems with the match between eligibility for the scheme and fuel poverty. A National Audit Office evaluation report in 2003 estimated that around a third of the fuel poor households in England were ineligible for the scheme, while two thirds of households eligible for the scheme were not fuel poor (NAO, 2003).
What Could Be Done Differently?
According to the current policy team it has proved harder to reach rural areas and hard-to-reach groups. Problems were also encountered when the Fuel Poverty Strategy was published. The Warm Front scheme had been set up with specific aims which then had to be readdressed once the scheme was required to fulfil the aims of the Fuel Poverty Strategy. The National Audit Office report stated that targets and best performance indicators were not in line with wider Government objectives, namely the Fuel Poverty Strategy (NAO, 2003). The report also highlighted the limited data on the impact Warm Front had had on actual costs in the households that had received support and infrastructure. Warm Front has moved from counting the number of households helped, to a target-based approach with energy targets set for each participating household (NAO, 2003).
Legacy
As with the Waste and Recycling Minimisation Programme - analysed below – the Warm Front scheme has succeeded in supplying a large amount of infrastructure in a short space of time. The scheme has highlighted the impact that household efficiency savings could have on environmental protection.

Waste Minimisation and Recycling Fund
Aims
The key aim of the scheme is to assist local authorities to meet statutory targets.
Delivery Mechanism
The National Waste Minimisation and Recycling Fund (NWMRF) is managed by Defra, and awards grants to English local authorities (LAs) outside London for a variety of projects to implement local waste minimisation schemes, and to improve recycling and composting performance. Grants were awarded through a competitive application process.
Background
The Waste Minimisation and Recycling Fund was set up in 2001 to combat a lack of infrastructure. The Fund also addresses wider Government objectives relating to waste and sustainable development.
Who Leads and Who Delivers
Local authorities have responsibility for devising their projects, bidding for funding and implementing the projects on the ground. The role of central Government is to assess bids and deliver funding to those who are successful.
Target Audience
The target audience are local authorities in England, though the expected outcomes of the Fund are increases in recycling rates and waste minimisation amongst households.
Timescale of Change Targeted
The ultimate aim of the scheme is to increase levels of household recycling by providing better infrastructure. The improvement in infrastructure is a short-term goal, while the increase in household recycling rates is long-term.
Outcomes
Members of the policy team interviewed noted how local authority performance had improved, with Government close to meeting the household waste, recycling and composting national target for 2005.
Recycling and composting rates increased in local authorities running projects supported by the Fund. During the second round of the Waste Minimisation and Recycling Fund (from 2003-04) kerbside projects supported by the Fund recycled or composted 79% of what was forecasted. Recycling and composting rates increased in all four of the project types: 'dry recycling single material kerbside', 'dry recycling multi-material kerbside', 'green waste kerbside' and 'dry recycling multi-material kerbside', with three projects in Round 2 increasing rates by over 10%. Awareness raising projects were recorded as adding an average of 0.2% to local authority recycling and composting rates – markedly lower than the average savings from the four kerbside scheme types (of between 1.3% and 2.4%).
It is difficult to measure the tonnage of waste diverted by waste minimisation projects. It was estimated that 32,287 tonnes was “minimised” as a result of the policy since 2002. Reported waste minimisation was 227% of the forecast figure, notably higher than for recycling and composting projects. All 11 waste minimization projects reported a decrease in waste, with ten projects significantly exceeding their planned targets (Defra, 2005b).
The majority of WMRF projects were kerbside schemes. Among these kerbside schemes, on average, single material projects collecting either glass or paper tended to have lower performance than the other three types in terms of additions to LA recycling rates and project capture rates, although average costs per tonne were significantly lower for this project type (Defra, 2005b).
(Cost) Effectiveness
£140 million was distributed in the first round, and £135m in second. The current policy team with responsibility for the fund felt there was now more recycling on the ground and a distinct lack of infrastructure had been addressed in a short space of time.

Links to Change Theory

Though the policy is not exactly 'bottom-up' (e.g. central Government has the last say as to which bids receive funding) responsibility for the action taken is left with the authority, who are closest to the problem.

Lessons Arising

There are issues with competitive bidding, with some local authorities denied funding because of problems with their proposals, regardless of whether their project was innovative or needed.

What Could Be Done Differently?

Members of the current policy team interviewed for this study highlighted the fact that there was no formal monitoring system in place before the Fund was started. According to the policy team, monitoring forms were sent out, but there are problems with the reliability of quarterly data coming back from local authorities. There were also several problems with data collection on the ground. Local authorities adapted projects during their implementation, with the result that it was hard to know how much additional money to put into schemes.

Legacy

The Fund can be seen as a good example of effectively tackling an environmental problem in a short space of time, tapping into a need for more infrastructure on the ground and local authority expertise on designing appropriate projects.