



## Investigating household waste prevention – a review of evidence

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# PRESENTATION STRUCTURE

- Background & questions asked
- Consumers – the engagement process
- Extent of WP behaviour practices
- Behaviour change motivations for Waste Prevention (WP)
- Barriers to WP behaviours
- Consumer WP campaigns
- Third sector, retail & service
- Illustrative potentials of WP options
- Conclusions



## BACKGROUND

In Autumn 2008, Defra commissioned an evidence review on household waste prevention.

The review included academic research and grey literature where relevant. Additionally, a review of international experiences in household waste prevention was undertaken.

A secondary objective was to engage stakeholders in the evidence review process, drawing their knowledge into the evidence base.

The research team was supported by a steering group & expert panel.



## QUESTIONS ASKED

The evidence review and the stakeholder dialogue were concerned with a range of questions; those addressed within this paper comprise:

- What is the extent to which household waste prevention behaviours are practised?
- What are the barriers and opportunities to encourage participation?
- What are the options available to householders?
- What are the options for stakeholders?
- What are the infrastructure considerations and technical solutions?



## Definition

The evidence review adopted the definition of waste prevention set out by the OECD. The definition encompasses:

- strict avoidance (not generating waste in the first place)
- source reduction
- product reuse (in its original form)
- as well as reducing the hazardousness of waste.

This definition excludes all forms of recycling – including food collection and commercial composting – and remanufacturing. The latter are sometimes included in a broader definition of “waste minimisation”.



## PROJECT ACTIVITY

More than 800 sources were identified in a scoping phase, including 19 WREP projects each with multiple reports. In all, 88 documents were reviewed in detail; 48 more were skimmed for relevant material, and 106 others studied within the international review.

The desk element was supported by stakeholder engagement, interviews with 19 UK experts, and input from 40 experts to the international review.

The evidence is presented here under two of the key 'entry points' at which prevention behaviour can be influenced:

- voluntary action by consumers at home
- support through stakeholders (eg retail & reuse sectors)



## CONSUMERS - ENGAGEMENT

The review found that there is no standard set of behaviours which is widely accepted as comprising 'household waste prevention'. In practice, it covers anything from rejecting junk mail to reusing food leftovers; from home composting to donating electrical goods to charities; from buying second hand clothes to avoiding single-use bags, and so on.

Unlike recycling - which is a more singular act - prevention comprises many small, individual, behaviours. Also unlike recycling, prevention behaviour tends to be private and invisible, so there is much less likelihood of a social norm developing.



## EXTENT OF WP BEHAVIOUR PRACTICES

From the literature, examples of the extent of practice for waste prevention behaviours include: home composting 35%; avoiding packaging 10-40%; committed to preventing food waste 14%; always using a 'bag for life' 23%; avoiding junk mail 15%; and buying second hand 30-45%.

On reuse, a higher percentage generally donates (clothes or bulky/WEEE goods) than purchases second hand. Freecycle membership is growing fast in the UK and has around one million members.

Studies suggest that around 60% of people claim to perform at least one waste prevention behaviour, but behaviours tend to be practised sometimes rather than always, and some people will do one or a few but not a whole range of behaviours.



## EXTENT OF WP BEHAVIOUR PRACTICES

Willingness is consistently greater than the actual level of engagement in waste prevention behaviours. Donating is commonly reported as the most practised behaviour; private reuse in the home and other 'low effort' reduction behaviours tend to occupy an intermediate position; and those that require major changes in habits are least practised.

Practice varies across different socio-economic groups and the variations are often specific to the behaviour in question. If a generalisation can be made, then an older, middle to high income woman living in a detached owner-occupied house with no children living at home and with a concern for the environment tends to be more likely than others to take part in waste prevention activities.



## Behaviour change factors & waste prevention

**Personal values, norms and identity** – I feel the issue is important, I feel responsible, I feel I am the kind of person who does this, and I feel I am able to do it, the perceived difficulty and costs

**Social norms and identity** – whether I want to act because I see others do it, or I feel obliged to do it because most people do it, do I get praise from others for doing it, or it gives me a sense of social 'belonging'

**External conditions** – whether I have access to services or products or whether there are other barriers that are out my control

**Habits** – not all action is reasoned (and therefore not subject to the direct influence of values, norms and so on) but theoretical mechanisms are described for breaking into habits and 're-freezing' new ones (eg learning by doing) .



## Motivations for waste prevention behaviour

WP behaviours are poorly correlated with recycling, and are sometimes even negatively correlated – such that recycling may become a reason for not doing more to reduce waste . The research also revealed a degree of confusion among the public between “recycling” and “reduction”.

Studies seeking to explain WP behaviour have generally found that their models have only weak explanatory power. Two of the main studies found that some 70 - 85% of the variation in behaviour could not be explained. Difficulty in explaining WP behaviour may be related to the fact that it is, in reality, not a single behaviour but many.



## Motivations for waste prevention

- Values
- Personal responsibility
- Self-efficacy
- Costs
- Social norms
- Habits



# Motivations for waste prevention

## Values

Several authors link waste prevention behaviour to underlying personal values, including what are commonly termed 'universal' values (generally where an individual puts collective benefits ahead of their own personal gain).

Moral and charitable motivations are drivers for reuse (especially donation) ; and an 'ethic of care' – a general sense of responsibility for the intrinsic value or on-going use of 'things' – has also been flagged.



# Motivations for waste prevention

## Personal responsibility

Acceptance of personal responsibility is often cited as a primary requirement for prevention behaviour. It may be manifested, for example, as a sense of duty or obligation, satisfaction, embarrassment (or lack of it in relation to second hand goods), guilt, and active concern.

Self-efficacy. This describes the personal capabilities, confidence, know-how and skills needed to carry out a particular behaviour. Interventions or campaigns may address it by providing hands-on help or giving tips on how to perform an activity.



# Motivations for waste prevention

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## Motivations for waste prevention

### Costs

Saving money through avoided or alternative purchase has been shown to be an important motivator - for example on home composting (through subsidy), plastic bags (charging), buying from charity shops, interest in refills, and switching from bottled to tap water.

Money-saving is a complex driver, however, and must be set against the risk that consumers will perceive cheaper or alternative products as lower quality options



# Motivations for waste prevention

## Social norms

Knowing or seeing that others are taking action can create a sense that individual contributions are worth the effort. A national survey, for example, indicated that 5 - 10% of home composters started due to encouragement from friends.

Social norm effects and peer support are actively deployed in behaviour change interventions based around small groups working together and some have recorded significant reduction impacts among the individuals taking part.



# Motivations for waste prevention

## Habits

Habits can have either a negative or a positive effect on prevention behaviour: they can either block the take up of new behaviours where routines are so established that consumers never think to question them; or help to maintain established 'good' behaviours.

The challenge for behavioural change interventions is to break disrupt routine thinking and help consumers maintain new habits once they try something new. This can be done through repeat communication and hands-on support.



## Barriers to waste prevention

- Apathy
- It's someone else's responsibility
- Inconvenience
- Cost
- Weak self-efficacy and a sense of powerlessness.
- Social norms don't favour waste prevention.
- Dominance of the recycling norm.



# Barriers to waste prevention

## Apathy

Apathy or a general lack of interest in the idea of prevention has been identified as a general barrier and specifically in studies of junk mail, food and refillables.



## Barriers to waste prevention

### It's someone else's responsibility

Lack of interest is often compounded by a feeling that business and retailers are more responsible for the waste problem than consumers, commonly noted around packaging but also food waste



# Barriers to waste prevention

## Inconvenience

Inconvenience is commonly cited as a barrier, with specific mentions for home composting, refillable packaging and retail self-dispensing systems, product service systems, reusable nappies and donating for reuse.

Non-participants can be put off by the perception of inconvenience without any actual experience.

Behaviour change projects may address this by providing opportunities to see activities 'for real' (eg nappy or home composting demonstrations) or by making it very easy to participate.



# Barriers to waste prevention

## Cost

Cost can be a motivator for buying low waste products where there is some price advantage (or subsidy); but where consumers perceive there will be little or no discount, or they think an alternative will be more expensive, this acts as a barrier (eg in relation to refills, product service systems and food purchase).

Special offers on food have been shown to contribute to food waste by encouraging people to buy more than they need.



## Barriers to waste prevention

**Weak self-efficacy and a sense of powerlessness.**

Weak self-efficacy and a sense of powerlessness. Many people feel that their contribution, either to the waste problem or to the solution, is marginal. In particular, some specific prevention behaviours can be seen as too insignificant to be worthwhile.

In addition, consumers may lack the know-how which would enable them to act differently, including what products to buy/use (eg nappies or home composting), how to manage wastage (eg on food or junk mail), or where to access services (eg reuse).



# Barriers to waste prevention

**Social norms don't favour waste prevention.**

This problem faces two ways: the prevailing social norm values mass consumption, rapid turnover of products and a personal identity built on the ownership of 'stuff'; waste prevention is not a mainstream behaviour and may sometimes be seen as weird or different, eg buying second hand.

Moreover, the actions that contribute to waste prevention are largely private and unseen, so there is no explicit social pressure to 'do the done thing', nor a reminder to hang on to new prevention habits – as there is now for recycling.



# Barriers to waste prevention

## Dominance of the recycling norm

Dominance of the recycling norm. As we saw above, the recycling norm has become so strong that this is generally people's understanding when they are asked to "reduce waste".

Intervention projects have found that people need to be educated about the specific actions they can take, and why these are worth doing, rather than relying on general exhortations to "reduce waste" – because many people believe they are already doing their bit by recycling.



## Consumer WP campaigns

Campaigns and interventions that tackle a full range of waste prevention behaviours are a relatively new area for local authorities.

The two main approaches trialled so far include:

- Doorstepping information and advice campaigns, targeted at all households in a defined area
- Volunteer household campaigns/projects, where individuals sign up to be part of group receiving a package of advice, challenge activities and (often) hands-on support



## Consumer WP campaigns

Table 1 Impacts achieved from waste prevention campaigns & promotions

Waste prevention behaviour	kg/hh/wk	Source
Home composting* – WRAP	2.9	(WRAP) personal communication
Home composting* – other literature review	3.5 – 3.8	(1)
Food waste* – becoming a committed food waste reducer – Love Food Champion	1.46 2.50	(WRAP) personal communication (11)
Bulky waste** - donate for reuse ( <i>NB</i> per person)	~ 0.07	(24 & 25)
Cross-cutting waste prevention campaign**	~0.5-1.0	0.5 est. from (3) 1.0 est. from (18)

\* data refer to impact of each *individual* recruited to an activity \*\* data averaged across *all households* in specified geographical area



# THIRD SECTOR, RETAIL & SERVICE

## Third sector strengths

- Innovation and creativity, before mainstream markets develop
- Serving niches that would otherwise not be covered by mainstream services
- Leverage of additional resources (eg through volunteering)
- Strong local ties, which may enhance education/comms activity
- Job creation for low skill workers or the long term unemployed
- Supply of appliances and furniture to low income households.



## THIRD SECTOR, RETAIL & SERVICE

Retail solutions – refillables & self-dispensing systems have obvious benefits, but there are barriers to uptake.



## Barriers to take-up of refills & self dispensing in UK



### Consumer

- Expectation that the refill will be (much) cheaper
- Lack of significant discount (real or perceived) between original and refill pack
- Perception that refills may be lower quality
- Making the pack too small makes consumers think they are getting less value, even if quantity is the same as the original
- Lack of awareness/worries about availability
- Lack of understanding about how refills work
- Needing to be organised
- Fear about 'lock-in' to particular product
- Concerns about hygiene in open access SDS
- Lack of branding on self-dispensed goods

### Retailer

- Shelf-space requirement of stocking original and refill versions of product – UK has greater product proliferation than, e.g., the US
- Stock management
- Perception of low market volume & impact on profits
- Mess & wastage from spillage (SDS)
- Possibility of needing staff to support customers in using SDS

### Producer

- Worries about cost of either refitting production lines to make refills, or sourcing additional suppliers
- Risks to brand image/perception of quality (esp. in relation to scuffing of reused glass; control where refill requires dilution)
- Potential loss of product identity & consumer 'lock-in' if container design becomes generic
- Perception of low market volume & impact on profits



## Potential WP from refills & self dispensing

Indicative impacts on total tonnages of **different refill options**:

- Glass instant coffee jars supported by soft pack refills: 77,000 tpa
- Soap pack pump dispensers: 4,000 - 7,000 tonnes pa
- Trigger household cleaner dispenser (+capped bottle: 7,500 tpa)
- A soap dispenser supported by pouch refills: 5,000 tpa
- Deodorant stick dispenser (+ shrink wrap refills): 10 - 11,000 tpa

The indicative savings **for self-dispensing systems** were less. Illustrative examples included a 70t reduction from cornflakes, 26t from coffee (assuming it replaces jars), and 86t for detergent cartons.



## Illustrative potentials of WP options

Actual achieved (latest year) – million tonnes/yr			
Love Food Hate Waste 2008 (a)	0.14	Courtauld – packaging 2008 (a)	0.08
Bulky & textiles reuse 2007 (e) (NB estimates suggest percentage of bulky reused could ~ double in future)	0.50	Carrier bags avoidance 2008 (a)	0.02
Projection or scenario – million tonnes/yr			
Home composting by 2020 (p) (included in LATS)	1.40	General household campaigns (p)	0.56 to 1.12
Love Food Hate Waste (p) (Courtauld by 2010)	0.16	Love Food Hate Waste (p) (total household food waste inc. above)	0.25
Junk mail – low (p)	0.12	Junk mail – high (p)	0.22
Reuse – furniture scenario (p)	0.22	Reuse – WEEE scenario (p)	0.10
Refill – e.g. glass coffee jars (p)	0.08	Refill – e.g. deodorant stick (p)	0.01
Mandatory rechargeable batteries (p) (if all single use substituted)	0.02	Self dispensing – e.g. cornflakes (p)	70 tonnes

a = actual achieved p = future projection, or scenario scaling up best practice e = estimate.



## RELATIVE IMPACTS OF WP OPTIONS

The figures suggest that the largest voluntary gains could come from home composting and local cross-cutting waste prevention campaigns (though there is likely to be double-counting here, as local campaigns normally include home composting promotion).

There are potential quick wins in options such as junk mail and carrier bag reduction (supported by voluntary agreements) that are popular with the public and relatively straightforward to implement. Since their WP impacts may not be great (eg with bags) it will be important to leverage any 'foot in the door' effects of initiatives on these aspects in order to educate on the bigger impact activities. This will be especially so in local campaigns.



Thank you

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