

WR1204

Household Waste Prevention

Evidence Review:

L3 m8-1 (T) – Waste Prevention

Evidence Map

A report for Defra's
Waste and Resources Evidence Programme

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L3 m8-1 (T) Waste prevention evidence map

This module’s purpose is to describe the range of sources investigated and the types of topic covered in the waste prevention evidence review, then to signpost to relevant Government departments, agencies and research centres which have accumulated expertise in a particular waste prevention topic.

It complements **L2 m8 Evidence gaps and signposts** and chapter 8 of the **L2 m1 Technical Report**. Related modules are:

L1 m1 Executive Report	L2 m1 Technical Report L2 m8 Evidence gaps and signposts	L3 m1 (D) Approach and method of the review L3 m5/2 (D) International review L3 m8/2 (D) Waste prevention bibliography L4 m1 Scoping sources L4 m2 Evidence review summaries
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(D) denotes a briefing paper providing more background detail; (T) indicates a short focused topic briefing

1.1 Evidence base

Defra provided 19 sources from its Waste and Resources Evidence Programme (WREP)¹ for review. Further scoping was then prioritised in favour of other Defra, Waste & Resources Action Programme (WRAP) and Environment Agency (where available) sources. We then turned to other sources including other government, academic, practice, third sector, consultancy, NGO etc. This included UK sources as well as taking lessons from the international literature (see **L3 m5/2 (D) International Review**). The diagram below illustrates the types of sources included in the scoping phase.



Figure 1 Evidence base

The sources have been captured and catalogued in a database that will be made available via Defra’s Wastenet. Over 800 sources (against a nominal target of 200) were identified in the scoping phase details of which can be found in **L3 m1 (D) Approach and method of the review**.

¹ WREP was established in 2003 in response to the Prime Minister’s Strategy Unit Report *Waste Not, Want Not*. WREP’s current focus is on delivering the evidence required for the implementation of Waste Strategy 2007. Since the programme started in 2004, more than 100 projects have been funded. The aims of WREP can be summarised as: delivering a robust waste and resources evidence base, facilitating its use for policy purposes, and ensuring effective communication with all stakeholders.

WREP projects

The WREP projects reviewed cover many different aspects of household waste prevention and related behaviour change research. The WREP projects reviewed can be grouped under the following headings (some projects span across several headings):

- **Individuals, households and communities** – a group of projects which looked at different approaches of engaging individuals, households and communities in some aspects of waste reduction activities (WR0114; WR0117; WR0504; WR0510; WR0209; and WR0208). Within this grouping two projects undertook action research to investigate small group behaviour change approaches (WR0117 and WR0114).
- **Measurement tools to analyse waste data and behaviour change** – a couple of projects whose primary focus was either the development or implementation of different monitoring and evaluation tools (WR0105 and WR0116).
- **Future lifestyle trends and forecasting** – a few projects who investigated modelling in order to understand household waste prevention behaviour (WR0107; WR0104; and WR0112).
- **Supply chain policy interaction** – one project exploring the various national and local policy measures and their impacts in addressing household waste prevention (WR0103).
- **Social enterprises and community waste sector** – a group of projects looking at the role of and the third sector in waste prevention (WR0502; WR0501; WR0211; and WR0506).
- **Resource use, retail solutions and product service systems** – a couple of projects investigating the potential of retail solutions and product service systems for waste prevention (WR0106; WR0113).
- **Consolidating the evidence base** – one early project whose task was to scope the way forward for behaviour change (WR0508).

Overall the WREP projects above provide a rich source of knowledge on various elements of waste prevention. In particular, the WREP evidence base offers a comprehensive picture on the role and state of the third sector in waste prevention activities in England, with the potential exception of identifying its *reuse* contribution separately from recycling; and the scale of social return on investment from third sector waste prevention activities. The Resources for Change project (WR0506) provides a starting point for other researchers wanting to explore social return on investment (SROI) further, reporting as it did many of the pitfalls to be avoided. The table below lists the WREP projects reviewed. For more detail on the coverage of WREP projects see [L2 m8 Evidence gaps and signposts](#).

Group	Project code	Project title	Contractor
Individuals, households and communities ²	WR0114	Building greater understanding of the techniques and processes required to promote sustainable waste management through behaviour change programmes	Global Action Plan
	WR0117	Developing a programme of practical waste minimisation schemes to take forward recent research on consumer behaviour and behavioural change	Hampshire County Council
	WR0504	Establishing the behaviour change evidence base to inform community-based waste prevention and recycling	Brook Lyndhurst
	WR0510	Attitudes to use of Organic Resources on Land	Open University
	WR0209	Enhancing participation in kitchen waste collection schemes	Brook Lyndhurst
	WR0208	Organic waste consultation	WTA Education Services
Measurement tools to analyse waste data and behaviour change	WR0105	Project REDUCE Monitoring and Evaluation – Developing tools to measure waste prevention	Waste Watch
	WR0116	Household Waste Prevention Activity in Dorset	Dorset County Council
Future lifestyle trends and forecasting	WR0107	Modelling the Impact of Lifestyle Changes on Household Waste Arisings	AEA Technology
	WR0104	Lifestyle Scenarios: the Futures for Waste Composition	Brook Lyndhurst
	WR0112	Understanding Household Waste Prevention Behaviour	University of Paisley
Supply chain policy interaction	WR0103	Household Waste Prevention Policy Side Research Programme	Eunomia Research and Consulting
Social enterprises and community waste sector	WR0502	Social enterprises and sustainable waste and resource management: evaluating impacts, capacities and opportunities	Cardiff University
	WR0501	Replicating Success: Social enterprises and the waste sector in London	London Development Agency
	WR0211	Unlocking the potential of community composting	Open University
	WR0506	Benefits of Third Sector Involvement in Waste Management	Resources for Change
Resource use, retail solutions and product service systems	WR0106	Achieving household waste prevention and promoting sustainable resource use through product service systems	Cranfield University
	WR0113	Refillable packaging systems	Loughborough University
Consolidating the evidence base	WR0508	Behaviour change: Scoping the way forward	The Social Marketing Practice

Table 1 List of relevant WREP projects

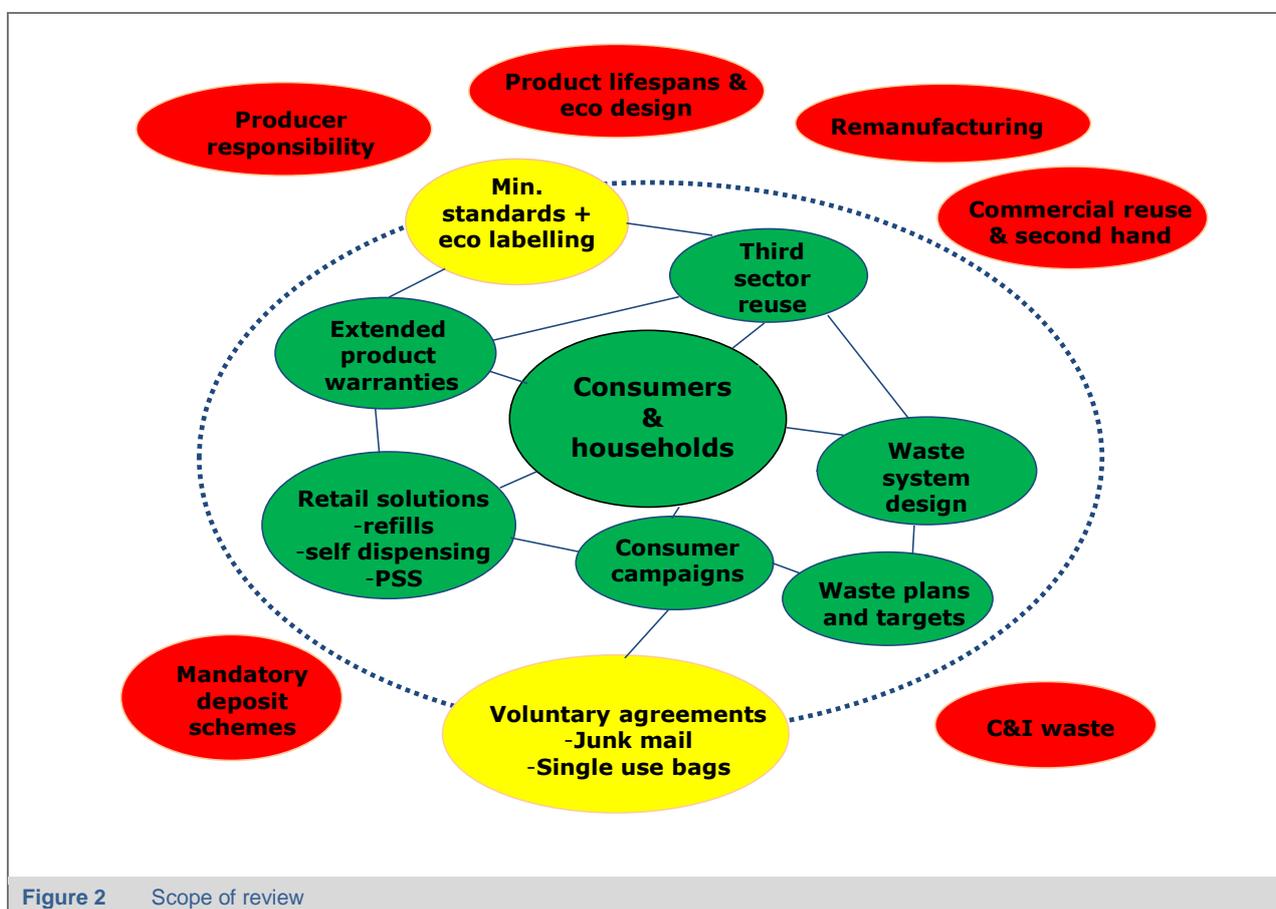
² Within this grouping two projects undertook action research to investigate small group behaviour change approaches (WR0117 and WR0114).

1.2 Scope of review

The scope of the review was informed by the life cycle approach set out in Waste Strategy 2007. Following Defra's specification, the research focused on **consumer facing options to prevent household waste**.

Figure 2, below, illustrates the topics which guided the scoping phases of the review using a traffic light system:

- **Green** identifies domains upon which the scoping phase focused, centred around consumers (e.g. campaigns, re-use, home composting).
- **Amber** signifies topics which we touched upon but which were not the focus of our scoping (e.g. voluntary agreements, minimum standards and eco-labelling).
- **Red** highlights areas which were out of the scope of the review (e.g. remanufacturing, commercial reuse and second hand, commercial and industrial waste, etc.).



The rest of this paper runs through each of the topics above, signposting to the key sources of evidence with the use of hyperlinks³. This module does not aim to provide an exhaustive list of all research centres and agencies conducting work in listed waste prevention areas but it is an attempt to signpost to the main sources we came across in our review.

³ At the time of writing hyperlinks provided were correct and active 13.05.2009.

1.3 Signposts within the scope of the review

Extended product warranties

- [WRAP's Sustainable Products Programme](#) – due to investigate product leasing and/or modular design
- [Centre for Business Relationships, Accountability, Sustainability and Society \(BRASS\)](#) – Cardiff University

Retail solutions: refills, self dispensing, product service systems (PSS)

- [Refillable packaging systems](#) – Loughborough University
- [Retail Innovation Programme](#) – WRAP
- [Cranfield University](#) – School of Applied Sciences
 - [Cranfield PSS Industry Research Club](#)
- [Waste and Resources Evidence Programme \(WREP\)](#) – Defra, specifically:
 - Loughborough University, 2006/7, WR0113
 - Cranfield University, 2008, WR0106
- [Inform](#) – take-back schemes and product service systems in the USA
- [Incpen](#) – Industrial Council for Packaging and the Environment

Consumers and households

- [WRAP consumer facing work](#) – investigation into public attitudes and behaviours on waste prevention behaviours (e.g. reuse, food waste prevention, home composting, junk mail, etc.)
 - Consumer Behaviour Change Baseline
 - Metrics (e.g. Committed home composter, Committed bag re-user, Committed food waste reducer)
- [Sustainable Consumption and Production Evidence Base](#) – Defra
- [Waste and Resources Evidence Programme \(WREP\)](#) – Defra, specifically:
 - Global Action Plan, 2006, WR0114
 - Hampshire County Council, 2008, WR0117
 - Brook Lyndhurst, 2006, WR0504
 - Open University, 2008, WR0510
 - Brook Lyndhurst, forthcoming, WR0209
 - WTA Education Services, 2007, WR0208
 - Brook Lyndhurst, 2007, WR0104
 - AEA Technology, 2006/7, WR0107
 - University of Paisley, 2006/7, WR0112
 - The Social Marketing Practice, 2005, WR0508
- [University of West Scotland \(Paisley\)](#) – Environmental Initiatives Research Group
- [University of Southampton](#) – Waste Management Research Group
- [University of Nottingham](#) – School of Geography – consumption and fashion
- [University of Sheffield](#) – School of Geography – consumption
- [University of Exeter](#) – School of Geography – environmental behaviour
- [University of East Anglia](#) – Environmental Sciences
- [BRASS \(Centre for Business Relationships, Accountability, Sustainability and Society\) Cardiff University – Electronics project](#)
- [Sheffield Hallam University – Centre for Sustainable Consumption](#)
- [University of Brighton – Waste and Energy Research Group](#) – in particular green cones and digesters
- [Food Chain Sustainability Special Interest Group](#) – food waste
- [Research Group on Lifestyles Values and Environment](#) – sustainable lifestyles
- [Measurement Evaluation Learning](#) – public attitudes survey for local authorities
- [Defra environmental behaviours survey](#) – tracks some waste prevention behaviours
- [Behaviour change theories](#) – Professor Tim Jackson
- [Behaviour change theories](#) – Andrew Darnton's review for the Government Social Research Service

Consumer campaigns

- [WRAP communication campaign work](#)
- [Waste and Resources Evidence Programme \(WREP\)](#) – Defra, specifically:
 - Dorset County Council, 2008, WR0116
 - Waste Watch, 2006/7, WR0105
- [Defra campaigns and programmes for public engagement and greener living](#) – Environmental Action Fund, Climate Change Fund, Every Action Counts and Act on CO₂
- [Defra](#) - work on consumer research on clothing and approaches to behavioural change
- L3 m5/2 (D) International Review

Waste system design

- [BRASS \(Centre for Business Relationships, Accountability, Sustainability and Society\) Cardiff University](#) – Direct and variable charging
- [Waste and Resources Evidence Programme \(WREP\)](#) – particularly current work by [Resource Futures](#)
- [Waste Information Network](#) – Local Authority guidance, performance and survey data
- [WRAP](#) – e.g. guidance on alternate weekly collections

Third sector reuse

- [OVAM](#) – Public Waste Agency of Flanders especially reuse infrastructure
- [Community Recycling Network](#) - reuse
- [London Community Recycling Network](#) –reuse in London
- [Community Recycling Network](#)
- [Community Recycling Network for Scotland](#)
- [Furniture Reuse Network](#) – bulky waste and reuse
- [Association of Charity Shops](#) – reuse
- WRAP's Third Sector Capacity Building Programme – REconomy delivered by [REalliance CIC](#)
- [BRASS \(Centre for Business Relationships, Accountability, Sustainability and Society\)](#) - Cardiff University
- [University of Northampton – School of Applied Sciences](#) – [Freecycle](#)
- [RREUSE](#) - European Federation of reuse and recycling social enterprises networks
- [Waste and Resources Evidence Programme \(WREP\)](#) – Defra, specifically:
 - Cardiff University, 2008, WR0502
 - London Development Agency/Brook Lyndhurst, 2007, WR0501
 - Open University, 2008, WR0211
 - Resources for Change, 2008, WR0506

Waste plans and targets

- L3 m5/2 (D) International Review
- [University of Brighton – Waste and Energy Research Group](#) – particularly waste prevention planes
- [Organisation for Economic Co-operation and Development](#) – policy angle
- [Waste and Resources Evidence Programme \(WREP\)](#) – particularly Eunomia Research & Consulting, 2007, WR0113

1.4 Signposts on the margins of the review's scope

Minimum standards and eco-labelling	Voluntary agreements
<ul style="list-style-type: none"> • WRAP's Sustainable Products Programme • OVAM – Public Waste Agency of Flanders 	<ul style="list-style-type: none"> • WRAP Courtauld Commitment on reduction in packaging and food waste • Defra and Direct Marketing Association Agreement on increasing proportion of direct marketing material going to recycling and promotion of Mailing Preference Service (opt-out for addressed mail) • Defra, retailers and British Retail Consortium Agreement on reducing carrier bag use

1.5 Signposts beyond the review's scope

Producer responsibility	Product lifespans & eco design
<ul style="list-style-type: none"> • Defra Producer Responsibility Team • Eunomia Research & Consulting – particularly Eunomia Research and Consulting et al., 2007, WR0103 • Academic work particularly from Germany see L4 m1 • Direct Marketing Association • Lean Enterprise Research Centre (Cardiff University IMRC) – focus on resource efficiency and supply chain • European Topic Centre on Sustainable Consumption and Production • SORTED WEEE toolkit – Loughborough University • L3 m5/2 (D) International Review • Cranfield University – School of Applied Sciences • BRASS (Centre for Business Relationships, Accountability, Sustainability and Society) Cardiff University – Electronics project • University of Northampton – Centre for Sustainable Wastes Management – Waste Electrical and Electronic Equipment and producer responsibility 	<ul style="list-style-type: none"> • Wuppertal Institute for Climate, Environment and Energy in Germany - eco-innovation • Network on Product Life Spans and discussion website– Sheffield Hallam University • Centre for Sustainable Design – University for Creative Arts in Farnham, Surrey • SCORE Network – EU/UN Sustainable Consumption Research Exchange • Innovative Manufacturing Research Centres (IMRC 16) - EPSRC – focus on built environment and engineering • Loughborough University – eco-design and sustainable design, specifically: <ul style="list-style-type: none"> ◦ Sustainable Design Research Group ◦ Eco-design • Ecodesign Centre • Defra - sustainable product roadmaps • Defra - evidence base to support sustainable production and materials
Remanufacturing	Commercial reuse and second hand
<ul style="list-style-type: none"> • Centre for Remanufacturing and Reuse 	<ul style="list-style-type: none"> • Centre for Remanufacturing and Reuse
Commercial and industrial waste	Mandatory deposit schemes
<ul style="list-style-type: none"> • Innovative Manufacturing Research Centres (16) - EPSRC – focus on built environment and engineering • Environment Agency • Path Way to Zero Waste – South East England Development Agency, EA and WRAP • Department for Business, Enterprise and Regulatory Reform • University of Northampton – School of Applied Sciences – landfill tax and waste minimisation • Eastex Materials Exchange – Freecycle for businesses • Environment Agency, Envirowise and the BOC Foundation – waste minimisation interactive tools 	<ul style="list-style-type: none"> • WREP study: ERM (2008) <i>Review of Packaging Deposit Schemes</i> • European Environment Agency (EEA)

Basis of this report

The material in this paper is derived from a large scale evidence review of household waste prevention conducted by Brook Lyndhurst, the Social Marketing Practice and the Resource Recovery Forum for Defra's Waste and Resources Evidence Programme.