

WASTE MATTERS

A SYSTEMATIC REVIEW OF HOUSEHOLD FOOD WASTE PRACTICES AND THEIR POLICY IMPLICATIONS

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KEY WORDS: Food waste, Consumer behaviour, Household, Literature review, Food practices, Food policy

RESEARCH CONTEXT

Globally, nearly one third of food produced for human consumption is lost or wasted, which equals a total of 1.3 billion tonnes of food per year (Gustavsson et al., 2011). From a climate perspective, according to calculations conducted by the FAO (2013), 3.3 GtCO₂e can be attributed to global food waste per year.

Private households represent the largest food-waste fraction in the whole food supply chain (BIOIS, 2010). However, little is still known about the determinants of consumer food waste and the underlying factors that encourage, drive or impede food waste prevention behaviours (Graham-Rowe et al., 2014).

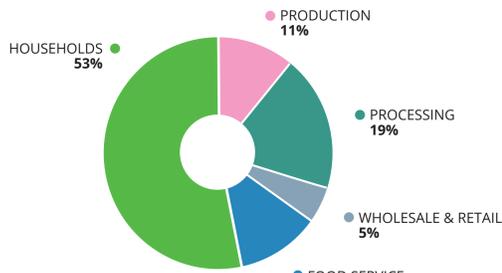


FIGURE 1: SPLIT OF EU-28 FOOD WASTE IN 2012 BY SECTOR INCLUDES FOOD AND INEDIBLE PARTS ASSOCIATED WITH FOOD (STENMARK ET AL., 2016)

METHOD

Applying a systematic literature review, we have assessed the still modest but rapidly growing body of empirical studies on households' food waste behaviours and distilled factors that foster and impede the generation of food waste on the household level.

All in all, a list of 60 articles were selected on which the systematic literature review is based.

OBJECTIVES

The objectives of this study are twofold:

First, we review and analyse evidence on the factors impeding or promoting the prevention of consumer food waste.

Second, based on this analysis, we provide insights into policy approaches as well as business and retailer options for tackling the issues raised by such evidence.

The overall aim of this systematic literature review is to deepen the understanding of household food waste behaviour.

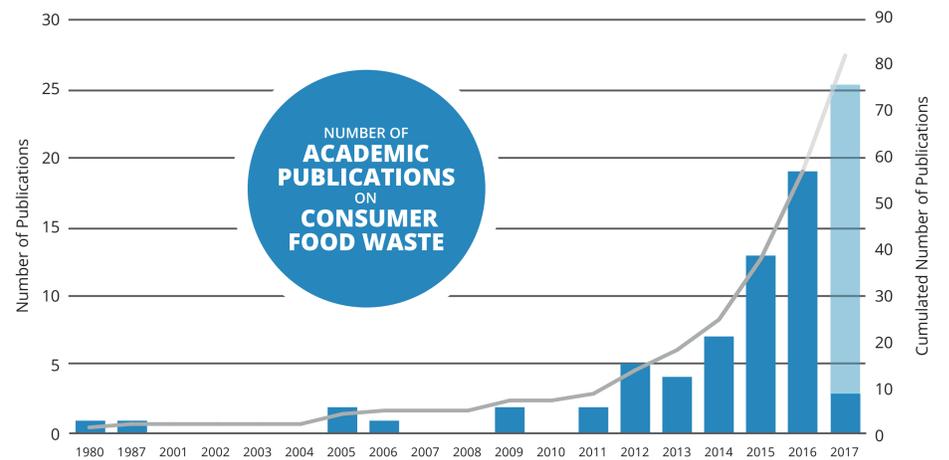


FIGURE 2: ACADEMIC PUBLICATIONS ON CONSUMER FOOD WASTE

SOCIO-DEMOGRAPHIC FACTORS

FACTOR	SCHOLARLY EVIDENCE
AGE	Most studies report a negative correlation between the amount of food wasted and age; generally, people over 65 years of age tend to waste less food.
GENDER	Some studies report that women produce less food waste, others indicate that gender does not have a significant effect, that females waste more or that if a woman is responsible for grocery shopping in the household, more food is wasted.
INCOME	Some studies find a positive correlation between income and food waste or report that households with different income levels differ in particular with regards to their attitudes towards food waste reduction.
EMPLOYMENT STATUS	Is potentially associated with food waste generation, i.e. employed people tend to produce more food waste compared to individuals not in the labour force.
HOUSEHOLD SIZE	Smaller households ordinarily produce less waste than larger households but the amount of food waste generated per capita decreases with increasing household size. Households with children tend to produce more food waste.

PSYCHO-SOCIAL FACTORS

UNDERLYING REASONS FOR FOOD WASTE	MEASURES TO PREVENT FOOD WASTE
ATTITUDES, NORMS AND PERCEIVED BEHAVIOURAL CONTROL	
LACK OF AWARENESS about the amount of food they waste (compared to others)	<ul style="list-style-type: none"> Interventions that measure a hh's food waste level and place it in perspective of societal averages or a socially-endorsed goal - P Introduction of taxes and fees such as PAY schemes on food waste and mandatory separate collection - P Door stepping campaigns, HomeLabs, Peer-supported processes, Action research - P • R&D Improvement of the food waste data availability - R&D
INSUFFICIENT CONCERN about food waste	<ul style="list-style-type: none"> Information that and why food waste is an environmental, economic, and social problem - P
MISSING LINK between food waste and environmental consequences	<ul style="list-style-type: none"> Regulations (waste reduction targets, laws and standards, mandatory management plans) - P
LACKING TRUST in their ability to reduce household waste Feeling that reducing food waste is NOT UNDER THEIR CONTROL	<ul style="list-style-type: none"> Educational programs and campaigns can be aimed at promoting volitional control - P
FEELING THAT WASTING FOOD IS THE NORM	<ul style="list-style-type: none"> Strengthening the belief that wasting foods is bad, unnecessary and immoral - P

B: BUSINESS, **H:** HOUSEHOLDS, **P:** POLICY, **R&D:** RESEARCH & DEVELOPMENT

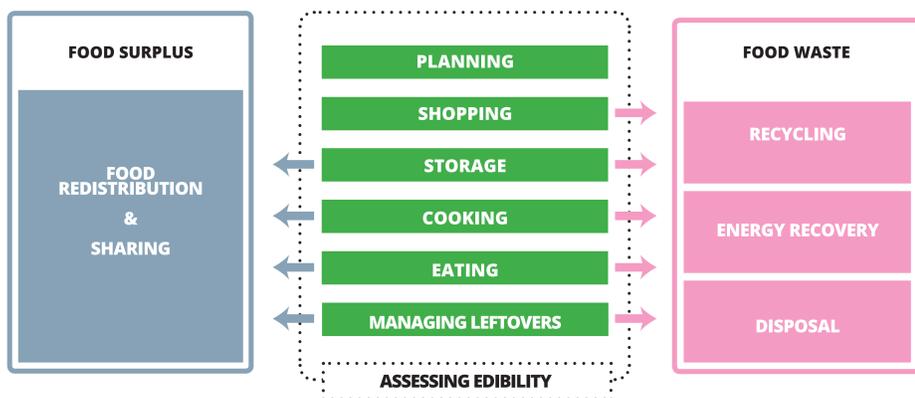


FIGURE 3: FOOD-RELATED HOUSEHOLD BEHAVIOURS

FOOD-RELATED HOUSEHOLD BEHAVIOURS

UNDERLYING REASONS FOR FOOD WASTE	MEASURES TO PREVENT FOOD WASTE
PLANNING	
LACK OF CORRECT PLANNING of food shopping and meals	<ul style="list-style-type: none"> Information regarding planning e.g. use shopping lists and make meal plans - P
LACK OF CONTROL ON FOOD SUPPLY and location at home	<ul style="list-style-type: none"> Smart fridges - B • R&D
INADEQUATE COMMUNICATION between household members	<ul style="list-style-type: none"> Mobile applications that list food inventory - B
SHOPPING	
GOOD PROVIDER IDENTITY	n/a
DIFFERENCES IN TASTE	
COMPENSATION EFFECT	
TIME CONSTRAINTS	
OVERSIZED PACKAGING	<ul style="list-style-type: none"> Provision of different package sizes - B
Shop food only from MAJOR SUPERMARKET CHAINS	<ul style="list-style-type: none"> Shop in smaller shops, farmers markets, grow own food - H
PREFERENCE FOR FRESH FOOD / Lacking acceptability of imperfect food	<ul style="list-style-type: none"> Education efforts to expand the acceptability foods that are older and/or less aesthetically pleasing, and those nearing their expiration dates - P Revise food product standards - P Supply of sub-optimal food at a discount - R&D
STORAGE	
IMPROPER AND UNSYSTEMATIC STORAGE PRACTICES	<ul style="list-style-type: none"> Smart fridges - P • R&D Improved temperature control in fridges - B Improved packaging (resealable, prolonging shelf-life of food) and clearer storage specifications - B • R&D Information and training on how to best storage different food - P
COOKING	
OVERPREPARATION due to insufficient cooking skills (e.g. portion control)	<ul style="list-style-type: none"> Training of cooking skills and using kitchen devices for better portion control - H
LACK OF KNOWLEDGE AND COOKING SKILLS for better utilising food creatively / Fixed repertoire of recipes and menus	<ul style="list-style-type: none"> Provision of mobile applications, platforms, books and courses on waste cooking - P • B
EATING	
UNPREDICTABILITY of appetite / eating patterns / Complexity of daily life	n/a
EATING OUT IN RESTAURANTS	<ul style="list-style-type: none"> Serve food on smaller plates - H
LARGE PLATES	
MANAGING LEFTOVERS	
Eating leftovers is perceived as sacrifice, thrift	n/a
WISH FOR VARIETY in menus	<ul style="list-style-type: none"> Education and information on the durability of leftovers, and how to improve visibility in fridge - P
LACK OF KNOWLEDGE about leftovers' edibility	
PROCRASTINATION	
ASSESSING EDIBILITY	
CONFUSION about date labels	<ul style="list-style-type: none"> Streamlining and optimising food date labelling - P • B
LACK OF KNOWLEDGE about shelf-life of food and how to extend it	<ul style="list-style-type: none"> Adapt health guidelines - P Review existing food-safety standards - P
Concerns about FOODBORNE ILLNESSES AND FOOD SAFETY	<ul style="list-style-type: none"> Education and information on the meaning of different food labels, the durability of food products, and food safety and hygiene - P
DISPOSAL	
Justifying food waste due to composting, feeding pets, recycling	<ul style="list-style-type: none"> Information about food waste hierarchy - P
Food sharing is NOT SOCIALLY ACCEPTED	<ul style="list-style-type: none"> Promotion of and financial support for food redistribution programmes - P

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