Plan Overview

A Data Management Plan created using DMPonline

Title: Food waste mitigating activities: the connection of retail and consumers, a scoping review

Creator: Rosa Hellman

Principal Investigator: Nicklas Neuman, PI for overall project (Uppsala University)

Data Manager: Nicklas Neuman, PI for overall project (Uppsala University), Rosa Hellman, Jonas Bååth, Sara Spendrup

Project Administrator: Rosa Hellman

Affiliation: Swedish University of Agricultural Sciences

Funder: FORMAS

Template: SLU-General

ORCID iD: 0000-0001-7970-4753

Project abstract:

This scoping review is part of a larger project funded by FORMAS titled Follow the Food: Waste reducing retail actions; what happens when the food reaches the consumer? (grant nr: 2023-01912). This data management plan only involves the scoping review (a separate plan has been created for the other parts of the project).

Global estimates show that almost a fifth of the food available for consumption is wasted by retailers (12%), food services (28 %) and households (60%) (UNEP 2024). To understand and battle this issue, consumer behaviour and practices in relation to food waste have been explored by scholars from a range of approaches (Evans 2011; Vittuari et al. 2020; Principato et al. 2021; Ellison et al. 2022). Likewise, studies in the retail context have explored causes of food waste (Teller et al. 2018; Yaran Ögel et al. 2023), its quantities (Eriksson et al. 2012, 2014; Cicatiello et al. 2017; Mattsson et al. 2018; Goodman-Smith et al. 2020) as well as activities performed by retailers to mitigate food waste (Filimonau & Gherbin 2017; Kulikovskaja & Aschemann-Witzel 2017; Liljestrand 2017; Watanabe et al. 2021; Mattsson & Williams 2022; Yang et al. 2023). Such activities occur both upstream and downstream in the food supply chain (Winkler et al. 2023). Upstream activities are characterised by proactively preventing food surplus by for example supplier-retail data sharing and improved demand forecasting. Downstream activities reactively seek to save surplus food from becoming waste by, for example, donating it to charity organisations or reducing prices on soon-to-expire items. Preventing the creation of food surplus (food fit for human consumption) and avoidable food waste (food surplus that has become unfit for human consumption) should always be favored over other alternatives such as recycling into animal feed or energy recovery (Papargyropoulou et al. 2014), still reactive downstream actions are used in retail stores to manage the food surplus that occur.

The responsibilization of food waste have been discussed in relation to both retailers and

consumers (Welch et al. 2021; Aschemann-Witzel et al. 2023). Retail food waste quantities are influenced by retail store operations and resources as well as demand and behaviour of consumers (Teller et al. 2018). Accordingly, Audet & Brisebois (2019) argues that food waste is socially produced through connections and activities between actors in the food chain, such as retailers and consumers. Similarly, Evans (2011) demonstrates how it is the social organisation of food practices that leads to food waste in households. Although households waste the most significant quantities of food, the retail sector has a major role in the food supply chain, being the link between actors such as producers, suppliers and consumers. This intermediary position grants retail companies significant influence over the food system (Macfadyen et al. 2015), making it an important actor for tackling the issue of food waste (Gruber et al. 2016; Kulikovskaja & Aschemann-Witzel 2017).

Some extant studies have connected the retail setting with downstream actors in relation to food waste mitigating activities. Young et al. (2018) investigated the influence of in-store food waste reduction messages on consumers' food waste behaviours. Another study explored how retail store activity on digital platforms for last-minute discounts affects the consumer activity on the platform (Mullick et al. 2021). Alexander & Smaje (2008) followed the flow of surplus food from retailers to donation recipients. Furthermore, the influence product durability, price and provisioning of online shopping platforms had on sales of product close to expiration was explored by Corsini et al. (2023).

Downstream interfaces in the supply chain connected to food waste have previously been reviewed by Bhattacharya et al. (2022). Reviews in the area of food waste mitigating activities have connected practices in retail stores to the causes of food waste (De Moraes et al. 2020), explored food waste management of food retailers using the food waste hierarchy framework (Huang et al. 2021), investigated the adoption of innovations in the supply chain (Aramyan et al. 2020) and reviewed consumer attitudes to purchasing suboptimal foods (e.g. fruits with deviating appearance) in the retail setting (Hartmann et al. 2021). Completing this body of research, this scoping review examines the linkage between retail actors and its downstream actors in food waste mitigating activities.

The negative impacts that the food system has on the world, makes it essential to mitigate food surplus and waste for ensuring sustainable development. Actions to mitigate food waste are therefore required to achieve the UN's sustainable development target 12.3 of halving food waste at retail and consumer level (United Nations 2015). To examine the connection of retailers and consumers in waste mitigation is thus of societal importance, not the least due to the retail sector's influence in the food supply chain, the use of downstream activities to mitigate food surplus and waste and the substantial quantities of food that is wasted on consumer level.

Scoping reviews can be used to identify available evidence in a specific research field, examine research conduct and identify research gaps (Munn et al. 2018). As this review does not seek to answer one specific question but rather explore a field of study and its evidence base, a scoping review approach is most suited over, for example a systematic literature review. The objective of this scoping review is to explore how food waste mitigating activities are studied in the interface of the retail sector and its downstream actors to subsequently propose relevant areas for future research within the field of food waste studies.

In this review food waste mitigating activities (upstream and downstream) are any type of actions taken by food supply chain actors to prevent or reduce food waste. However, the focus of the study is limited to such activities that interconnect retailers and downstream actors. Downstream actors are referred to as any actor that follow retail actors downstream in the food supply chain.

ID: 153175

Start date: 03-05-2024

End date: 13-12-2024

Last modified: 01-09-2024

Grant number / URL: 2023-01912

Copyright information:

Food waste mitigating activities: the connection of retail and consumers, a scoping review

1. General Information

1.1 DMP - DMP Title

Hellman-FTFSR-FORMAS-2023-DMP (Responsible for data management-Follow the Food Scoping Review- funder- year granted by funder-DMP

1.2 DMP - Date of Creation

2024-06-19

1.3 DMP - Date of Modification

2024-08-16

1.4 DMP - Version

1.3

1.5 DMP - Contact Person

Rosa Hellman, rosa.hellman@slu.se, Department of People and Society, SLU, https://orcid.org/0009-0008-3923-3713

1.6 Project - Project Title

Food waste mitigating activities: the connection of retail and consumers, a scoping review

1.7 Project - Project Description

The negative impacts that the food system has on the world, makes it essential to mitigate food surplus and waste for ensuring sustainable development. Actions to mitigate food waste are therefore required to achieve the UN’s sustainable development target 12.3 of halving food waste at retail and consumer level (United Nations 2015). To examine the connection of retailers and consumers in waste mitigation is thus of societal importance, not the least due to the retail sector’s influence in the food supply chain, the use of downstream activities to mitigate food surplus and waste and the substantial quantities of food that is wasted on consumer level.

The objective of this scoping review is to explore how food waste mitigating activities are studied in the interface of the retail sector and its downstream actors to subsequently propose relevant areas for future research that can contribute to mitigating food waste and sustainable development. This review aims to answer what characterises research in the context of the retail sector and its downstream actors in relation to food waste mitigating activities in terms of research aims, methods, which types of mitigating activities are studied and how they connect retail and downstream actors.

The scoping review is part of a larger project funded by FORMAS named Follow the Food: Waste

reducing retail actions; what happens when the food reaches the consumer? (grant nr: 2023-01912). This data management plan only involves the scoping review (a separate plan has been created for the overall project). The review will involve the following steps:

- Creating data management plan
- Preregistration of scoping review protocol in OSF registries
- Database searching
- Screening of sources
- Data extraction
- Analysis and presentation of evidence
- Manuscript preparation
- Archiving data from previous steps
- Publishing data from previous steps (conducted after project end subsequent to publication in academic journal)

The published data gathered from the conduct of this scoping review will provide a transparent presentation of the methodology and results of the project following the principles of open science.

1.8 Project - Project ID

ID for this DMP at SLU: SLU.ltv.2024.1.1.1-512

1.9 Project - Project Leader

Project leader for scoping review Rosa Hellman, rosa.hellman@slu.se, Department of People and Society, SLU, https://orcid.org/0009-0008-3923-3713

Project leader for Follow the food(overall project) Nicklas Neuman,nicklas.neuman@ikv.uu.se, Department of food studies, nutrition and dietetics, Uppsala University, https://orcid.org/0000-0001-7970-4753

Supervisor Sara Spendrup, sara.spendrup@slu.se, Department of People and Society, SLU,https://orcid.org/0000-0001-7690-0919

Supervisor Jonas Bååth, jonas.baath@slu.se, Department of People and Society, SLU, https://orcid.org/0000-0002-9521-1833

1.10 Project - SLU Focus Area

- SLU Research

SLU research in collaboration with Uppsala University.

1.11 Project - Start Date

2024-05-03

1.12 Project - End Date

2024-12-13

13. Project - Funding

- Yes

Funding granted.

1.14 Project - Funder Name

- FORMAS (501100001862)

1.15 Project - Funder Grant ID

2023-01912

1.16 Project - Contributor

Rosa Hellman, rosa.hellman@slu.se, Department of People and Society, SLU, https://orcid.org/0009-0008-3923-3713
Nicklas Neuman,nicklas.neuman@ikv.uu.se, Department of food studies, nutrition and dietetics, Uppsala University, https://orcid.org/0000-0001-7970-4753
Sara Spendrup, sara.spendrup@slu.se, Department of People and Society, SLU, https://orcid.org/0000-0001-7690-0919
Jonas Bååth, jonas.baath@slu.se, Department of People and Society, SLU, https://orcid.org/0000-0002-9521-1833

2. Data Description and Collection or Reuse of Existing Data

2.1 Will newly collected/produced data, already existing data, both, or neither be used in the project? (multiple answers are allowed)

- Reusing already existing data
- Collecting/producing new data

2.2 What type of data will be newly collected/produced and/or reused and how will new

data be collected/produced and/or already existing data reused?

Data will be collected from already published material (re-used) . From this material new data will be generated in the form of the data types found in the table below. Data is produced through development of scoping review protocol and search strategy. The database searches will generate a specific collection of previosly published records. Screening results will generate included and excluded (with reasons) records. Data extraction will collect data from each included record.

Type of data	Collection of data	Data format (active storage and back up)	Data format (long term preservation)	Data volume
Search strategy(search queries & inclusion/exclusion criteria)	A search strategy is developed to find relevant record in the chosen databases and inclusion/exclusion criteria to be applied when screening.	.pdf and docx.	.pdf	<1 GB
Literature database records	Searches will be made in Web of Science Core Collection, Scopus, CAB Abstracts, PsychINFO and GreenFILE.	RIS and .csv	.csv	<1 GB
Records collected from other sources	Reference lists of the included records from databases will be searched for additional sources.	RIS and .csv	.csv	<1 GB
Included records	The screening will results in a number of included records to be used in data extraction. The citation details of these will be listed.	RIS and .csv	.csv	<1 GB

Excluded records with reason for exclusion (title/abstract level)	The title/abstract screening of records will result in a number of excluded records accompanied by reason for exclusion and citation details.	.csv	.csv	<1 GB
Excluded records with reason for exclusion (full-text level)	The full-text screening of records will result in a number of excluded records accompanied by reason for exclusion and citation details.	.csv	.csv	<1 GB
Data extraction of included records	Data will be retrieved and reformulated from the full text of included records and transferred to the extraction sheet. The following entities will be extracted: citation details, country of study, study aims and research questions, methodological approaches, type of food waste reducing activity studied,type of connection between food retail and consumer and main study results.	.xls	.csv	<1 GB

Full text of included records	Full-text of the included records will be retrieved from the databases for full-text screening. These will be kept for active storage as long as necessary for the scoping review.	pdf.	The possibility of publishing full-texts in SND is being looked into.	<1 GB

2.3 What kind of data will be collected/produced and/or reused? (multiple answers are allowed)

- Numerical data
- Derived/compiled data
- Descriptive data

2.4 In what format will the data collected/produced and/or reused come in?

See table under 2.2. The formats for long term preservation is based on the guidance for choosing file format provided by the the Swedish National Data Service (SND) where data will be published and from SLU Data Management Support who will assist with archiving.

2.5 What volume of data will be collected/produced and/or reused throughout the project's lifetime?

- 1-100 GB

See table in 2.2.

3. Documentation and Data Quality

3.1 What metadata (i.e., contextual information describing the data) and documentation will accompany the data?

A readme- file (.txt) will accompany the data (see table in 2.2). This will clarify terms, abbreviations, data content, the file organisation system and the file naming convention. Descriptive, administrative, structural, provenance and access metadata will be added, based on DDI metadata standard (Data Documentation Initiative) when data is published in the SND.
A scoping review protocol has been developed according to JBI Manual for Evidence Synthesis (Peters

et al. 2024) and preregistered in the OSF. This will serve as a documentation of the scoping review process and published in the SND.

3.2 How will the data be organised during the project? (multiple answers are allowed)

- By use of folder structure
- By use of file/folder naming convention

Data will be organised using a hierarchical folder structure for each phase (protocol & preregistration, search, screening, extraction, analysis & presentation of evidence) in the scoping review.

Files in the folder will be named according to the following naming convention:

[project abbreviation]- [content]- [version number*]-[description of update]-[date of update]-[editor initials]- - [original date]. [file format]

Example: FTFSR- Pilot extraction- version 1.3- Extraction finished- 2024-03-01-RH- 2023-02-01.xls

Any updates or changes should be made in a copy of the original file and an updated version (titled according to the naming convention) uploaded to OneDrive.

*The first number in version indicated major changes. The second number indicated minor changes.

3.3 How will the data be managed during the project? Will data be managed with the help of technical equipment/systems?

- Yes

The following softwares will be used: Endnote (deduplication), Rayyan (screening), Miscrosoft Excel 2016 (extraction).

3.4 What data quality control measures will be used?

Data quality control is performed by involving at least two reviewers when screening, extracting and analysing/presenting results.

4. Storage and Backup during the Research Process

4.1 How will data, metadata, and other documentation be stored and backed up during the project?

All data will be stored and backed up in a shared OneDrive. Raw data files are also backed up in the personal file storage system of the project administrator (file storage system provided by SLU) in read-only files.

4.2 How will data be secured/protected during the project?

Access to data stored in OneDrive is controlled via authorisation. Back- up is handled by Microsoft. Access to data stored on personal file storage system provided by SLU is controlled via authorisation. Data recovery is ensured by SLU-IT in case of accident. As the data handled is not considered sensitive no further protection is implemented.

4.3 Have SLU's IT department (support@slu.se) or your institution's IT support, Data Management Support (DMS; dms@slu.se), Data Protection Unit (dataskydd@slu.se), and/or Security (sakerhet@slu.se) Unit been contacted with regard to data storage and backup as well as protection? (multiple answers are allowed)

- SLU DMS
- SLU IT/Institutional IT Support

5. Legal and Ethical Requirements, Codes of Conduct

5.1 Do you intend to process sensitive data (e.g., personal information, politically sensitive information, trade secrets, etc)?

- No

5.2 How will compliance with legislation on personal data and on security be ensured? (multiple answers are allowed)

Not applicable for this project.

5.3 How will other legal issues, such as intellectual property rights and ownership, be managed? What legislation is applicable?

The data will be openly accessible in SND once the review has been published in an academic journal. CC0 licencing is planned to be applied on data generated in the project. The possibility of publishing full-text of indluded records in being looked into.

The publication of the scoping review in an academic journal is planned to will be openly accessible with CC BY licence.

5.4 What ethical issues and codes of conduct are there, and how will they be taken into account?

Not applicable for this project.

6. Data Sharing and Long-Term Preservation

6.1 How and when will data (or metadata) be shared (i.e., made publicly available)? Are there possible restrictions to data sharing and embargo reasons?

The data will be published freely accessible in the repository Swedish National Data Service (SND) after publication of the final manuscript planned within a year after project end (2024-12-13).

6.2 How will data for preservation be selected, and where will data be preserved long-term (e.g., a data repository or archive)?

Data will be preserved in the SND and the archive service at SLU.

6.3 What methods/systems, software tools, source code or other types of services are needed to understand, access, and use the data?

The data will be published in the Swedish National Data Service (SND). No specific systems/software/codes/services are considered required.

6.4 Will a unique and persistent identifier (such as a Digital Object Identifier [DOI]) to each data set be pursued?

- Yes

A persistent identifier will be pursued through SND.

7. Data Management Responsibilities and Resources

7.1 Who (e.g., role, position, and institution) will be responsible for data management?

Rosa Hellman, doctoral student
rosa.hellman@slu.se, Department of People and Society, SLU, https://orcid.org/0009-0008-3923-3713
Responsible for data management during and after project, for implementing and updating DMP and ensuring DMP is reviewed and revised.

7.2 Do agreements/contracts exist?

- Yes

SLU and Uppsala University(UU) has agreed that data management associated with the scoping review will be handled by SLU and all other parts by UU.

Agreement of conditions (godkännande av villkor) with "Formas – a Swedish Research Council for Sustainable Development".

Decision number for granted funding: AC-2023/0033.

Dnr: 2023-01912

7.3 What resources (e.g., costs and time) will be dedicated to data management?

Staff time will be required to perform data management. No additional resources are required.

7.4 What resources (e.g., costs and time) will be dedicated to ensuring that data will be FAIR (Findable, Accessible, Interoperable, Reusable)?

Staff time will be required to ensuring the FAIR principles are implemented.