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# **REPORT 2: Phase 1**

## ***Literature Review***

Project 1.3.7: Understanding how trading practices affect food loss and waste in Australia

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## Executive Summary

This is Report 2 from the project 'Understanding how trading practices affect food loss and waste in Australia'. The project investigates how trading practices impact on food loss and waste in Australia and what are the solutions to situations where a trading practice is contributing to food loss and waste. This report aims to provide an overview of the literature regarding unfair trading practices in the agriculture and food supply chain more broadly, as well as in relation to food loss and waste more specifically. It also highlights mechanisms suggested in the literature to address unfair trading practices. In doing so, this report provides an overview of what is currently known within the literature, and provides necessary context for Reports 3-5.

Based on a review of the literature, Report 2 identifies the following key points:

1. Market imbalances within the agriculture and food supply chain mean that it is more susceptible to unfair trading practices.
2. Unfair trading practices within the agriculture and food supply chain typically fall under one of the following categories:
  - a. Costs and risks; specifically, where these are 'unfairly' shifted from one party to another;
  - b. Benefits and advantages; specifically, where certain benefits or advantages are requested by one party without their being any reciprocal benefit or advantage being offered to the other party;
  - c. Changes to contracts, unless these are allowable under fair trade terms; and
  - d. Termination; specifically, where a contract is 'unfairly' terminated, or where this is an 'unjustifiable' threat of termination (European Commission, 2018; see also Taylor et al., 2019).
3. Perishable goods, particularly where primary producers supply directly to retailers, are recognised as being more at risk for experiencing unfair trading practices due to the time constraints of finding alternative markets should that produce be rejected (e.g., Piras et al., 2018).
4. Judging what is a fair or unfair practices can often be difficult, as the same practice can be perceived differently in different situations (Arpášová & Rajčániová, 2022) and/or as normal competitive behaviour (Falkowski et al., 2017).
5. There are practices that could still be considered grossly unfair, even if both parties 'agree' to them (González, 2022). This is important to note with respect to both the EU Directive on Unfair Trading Practices 'grey unfair trading practices' and the Food and Grocery Code's wording that makes certain practices allowable if agreed by both parties (See Report 4 for more on this).
6. The market imbalances/power dynamics considered as underlying factors behind UTPs also creates a situation whereby UTPs may not be reported for fear that even reporting these could damage a commercial relationship and result in termination (see, for example, Falkowski et al., 2017; Taylor et al., 2019; Wiewiórowska–Domagalska et al., 2015; but also Devin & Richards, 2018 and additional commentary in Section 5 of this report).
7. There is fairly limited literature that explicitly connects unfair trading practices to food loss and waste. While this literature highlights some practices that fall under the four categories noted in Point 2, a number of these practices did not neatly fit into these categories. Further to this, to date, there is limited literature that highlights, based on empirical analysis, whether or not regulating against unfair trading practices reduced food loss and waste.

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## 1. Introduction

This report is the second report of a total of five reports that were written for Project 1.3.7, which aimed at understanding trading practices affecting food loss and waste (FLW) in Australia. Specifically, this report focuses on Phase 1 of the project, whereby a literature review was conducted to understand trading practices contributing to FLW.

The report is structured as follows.

First, an overview of the approach used to locate relevant literature is explained, as well as the process the research team used to review this literature. This section notes that the scope of this report was limited to focus on unfair trading practices (UTPs) within the context of food and agriculture supply chains and FLW more specifically, rather than the broadly literature on FLW more generally.

The report then goes on to summarise the relevant literature relating to: (1) UTPs in the food and agriculture supply chain more broadly; (2) UTPs in relation to FLW more specifically; and (3) mechanisms outlined in the literature to address UTPs in the food and agriculture supply chain.

For reference, the following provides an overview of the other project reports:

- Report 1 provides findings from a review of the Australian context regarding trading practices including: food loss and waste (FLW) in Australia, supply chain characteristics, the regulatory environment, and relevant government inquiries related to either trading practices and/or the food supply chain. It then goes on to provide an overview of trading practices, including defining unfair trading practices and outlining relevant aspects of Australian competition and consumer law. Attention is then given to international and Australian legislation and regulations relating to unfair trading practices in the context of agriculture and the food supply chain.
- Report 2 presents the findings from Phase 1 of the project, whereby a literature review was conducted to map trading practices that contributed to FLW, both internationally and in Australia.
- Report 3 provides findings from Phase 2 of the project, in which interviews were conducted with industry stakeholders in the Australian food supply chain to develop an understanding of relevant trading practices contributing to FLW. This report provides an overview of the method and highlights key themes that emerged from the data, including in relation, but not limited, to market imbalances, 'contracts' that require or facilitate overproduction, oversupply and/or FLW, lack of data/transparency, and lack of alternative markets. This report concludes by making connections between the themes and issues that emerged during the interviews with the unfair trading practices recognised as per EU *Directive on Unfair Trading Practices* (Directive 2019/633 of the European Parliament and of the Council of 17 April 2019 on Unfair Trading Practices in Business-to-Business Relationships in the Agricultural and Food Supply Chain, 2019). Limitations of this aspect of the project are also outlined within Report 3. It is important to note here that the EU *Directive on Unfair Trading Practices* was used throughout the research because it provides a clear definition and list of unfair trading practices, unlike in Australia where a legal definition and set list of practices does not currently exist. It is recognised however, that what is 'fair' or 'unfair' is partly dependent on cultural context, and so what is considered fair or unfair within Australia may differ from the EU. Nonetheless, the EU context provides a useful example of what practices could be considered unfair and what practices may be considered 'grey' or ambiguous.

- Report 4 delivers the findings from Phase 3 of the project. This report provides a 'deep dive' of three potential solutions that may aid in addressing some of the practices and issues noted in Report 3. Specifically, it (1) explores strengths and limitations of industry codes; (2) considers how data transparency could be addressed; and (3) investigates the potential of whole crop purchasing in mitigating oversupply.
- Report 5 brings together the key insights across Reports 1-4 and provides a summary of the project. Importantly, this final report builds on insights across the entire project to offer recommendations with respect to trading practices and FLW.

## 2. Methodology

In order to understand the connection between FLW and trading practices, the research team conducted an in-depth literature review of grey and academic literature. This initially involved a Google Scholar search for academic articles using the search term: “trading practices” AND “food waste”. This was followed by a Google search using the same search term to locate relevant grey literature. Relevant articles were saved, read, and mapped to understand the connection between trading practices and FLW. Snowball procedures were also used, in that specific publications which had been cited by others but not initially captured in our broad search were also retrieved and mapped. In total, just under 200 publications were reviewed as part of this phase of the project.

The mapping of each publication involved documenting: (1) the ‘trading practice/s’ discussed; (2) the type of source (i.e., industry, government, non-government, academic); (3) what region it focused on; (4) whether it highlighted negative or positive trading practices; (5) stage of the supply chain; (6) if it focused on a specific product type; (7) what root cause explained this practice; and (8) what interventions can be used to address this practice.

This mapping process iteratively evolved as we reviewed the literature. Specifically, we found that much of the literature focused more broadly on activities causing FLW with limited connection to specific trading practices. Further to this, the literature more directly considered trading practices and tended to focus on trading practices within the food and agriculture supply chain more broadly, and not necessarily those contributing explicitly to FLW. Thus, the first category noted above (‘trading practices’) involved, ultimately, mapping both trading practices and activities causing FLW. Further to this, very few publications made explicit connections between trading practices, the root causes of those trading practices, and interventions or solutions to those trading practices or their causes (see Lewis et al., 2017 for a notable exception, though this was not in relation to trading practices specifically). Rather, these various components tended to be treated in isolation, and thus, the research team also mapped these separately.

Overall, much of the literature (both academic and grey) focused on trading practices and/or FLW within the European Union (EU) context, followed by the United Kingdom (UK), which is not surprising given the work being done in these jurisdictions to address unfair trading practices (UTPs) in the food and agriculture supply chain (See Report 1). The review did include some Australian-specific publications from grey sources, including those written by industry actors or government.

This report focuses only on the literature relating specifically to UTPs in the food and agriculture supply, as well as the literature that makes an explicit connection between UTPs and FLW. Here, it should be noted that this literature typically focused on UTPs between retailers and suppliers.

### 3. Unfair trading practices in the food and agriculture supply chain

As outlined in Report 1, UTPs are commonly defined as, “practices that grossly deviate from good commercial conduct, are contrary to good faith and fair dealing and are unilaterally imposed by one trading partner on another” (Falkowski et al., 2017, p. 6). This definition draws on the European Commission’s definition of trading practices and is widely used across academic literature (European Commission, 2014; see also, Falkowski et al., 2017; Taylor et al., 2019; Wunder et al., 2018).

As scholars have recognised, food and agriculture supply chains are “particularly susceptible to UTPs” (Piras et al., 2018, p. 7; see also, Taylor et al., 2019). Overwhelming, the literature points to market concentration and the related structure of food supply chains whereby a few large retailers interact with a large number of suppliers as the main reason why food and agriculture supply chains are susceptible to UTPs (3Keel LLP, 2021a; Arpášová & Rajčániová, 2022; Biely et al., 2018; Bos-Brouwers et al., 2020; Bradshaw, 2020; Csirszki, 2021; V. I. Daskalova, 2018; Falkowski et al., 2017; FAO, 2023; Fels, 2024; FIAL, 2021, p. 5; González, 2022; Malnar et al., 2021; Markou et al., 2020; O’Connor et al., 2022; Piras et al., 2018; Swinnen et al., 2021; Taylor et al., 2019; Vaqué, 2014; Wunder et al., 2018; WWF UK, 2021). Related to market power, the literature also suggests that the inability of suppliers to switch to another retailer and to terminate an existing relationship, due to high costs and/or the lack of options/alternative markets (Colbert, 2015; Fels, 2024; Wiewiórowska–Domagalska et al., 2015) and the resulting economic dependence suppliers then place on a few retailers (Csirszki, 2021) as additional reasons why this supply chain is more likely to experience UTPs.

With specific reference to UTPs in the food and agriculture supply chain, the European Commission suggests that these practices typically occur within four main categories:

1. Costs and risks; specifically, where these are ‘unfairly’ shifted from one party to another;
2. Benefits and advantages; specifically, where certain benefits or advantages are requested by one party without their being any reciprocal benefit or advantage being offered to the other party;
3. Changes to contracts, unless these are allowable under fair trade terms; and
4. Termination; specifically, where a contract is ‘unfairly’ terminated, or where this is an ‘unjustifiable’ threat of termination (European Commission, 2018; see also Taylor et al., 2019).

Specific UTPs highlighted in the literature are summarised in Table 1. This research has analysed the existing literature and has categorised the various UTPs noted according to the four categories noted by the EU’s work on UTPs (Column 1). While Column 2 focuses on the literature, Column 3 summarises practices that have been identified in Australia (AU), EU, and the UK, via annual surveys relating to the Food and Grocery Code (AU) (AU F&GC, 2023); EU *Directive on Unfair Trading Practices* (European Commission, 2024) and the Groceries Supply Code of Practice (UK) (UK GCA, 2024; UK Government, 2009). It should be noted here that while the EU *Directive on Unfair Trading Practices* explicitly labels these practices as UTPs, this is not the case for the Food and Grocery Code and Groceries Supply Code of Practice.

Table 1. Summary of trading practices in the food and agriculture supply chain

Category	Literature	Annual surveys - Codes/regulations
<b>Costs and risks</b>	<ul style="list-style-type: none"> <li>• Claims for, and/or forcing the supplier to pay for wasted products (Barling et al., 2018; Cafaggi &amp; Iamiceli, 2018)</li> <li>• A buyer returning unsold food products to a supplier (Barling et al., 2018)</li> </ul>	<ul style="list-style-type: none"> <li>• Not allowing time (30 days) to challenge proposed invoice deductions, or deducting even if challenged (UK GCA, 2024)</li> </ul>

Category	Literature	Annual surveys - Codes/regulations
	<ul style="list-style-type: none"> <li>Obligation to compensate for losses incurred by the buyer (Wiewiórowska–Domagalska et al., 2015)</li> <li>Contractual sanctions that are applied in a non-transparent manner and are disproportionate to damages suffered (Falkowski et al., 2017)</li> <li>Sanctions imposed without any justification in the agreement or applicable law (Falkowski et al., 2017)</li> <li>Transfer of unjustified or disproportionate risk to a contracting party (Falkowski et al., 2017; Glöckner, 2017; González, 2022)</li> <li>One party unduly or unfairly shifting its own costs or risks to the other party (Falkowski et al., 2017)</li> <li>Costs of contract enforcement (Arpášová &amp; Rajčániová, 2022)</li> <li>Transfer of commercial risk (Wiewiórowska–Domagalska et al., 2015)</li> <li>Excessive and/or unpredictable transfer of costs or risks (Wiewiórowska–Domagalska et al., 2015).</li> </ul>	<ul style="list-style-type: none"> <li>Requests for lump sum payments relating to retailer margin shortfall not agreed at the start of the contract period (UK GCA, 2024)</li> <li>Payments for wastage (UK GCA, 2024, AU F&amp;GC, 2023)</li> <li>Payments for deterioration and/or loss (EU, 2024)</li> <li>Returning unsold products to the supplier without paying for them (EU, 2024)</li> <li>Unfair, unreasonable or unexpected charges for packaging (UK GCA, 2024)</li> <li>Unfair, unreasonable or unexpected charges for artwork and design (UK GCA, 2024)</li> <li>Incurring penalty charges when forecast is not prepared with due care (UK GCA, 2024)</li> <li>Deductions off invoice/remittance without consent (AU F&amp;GC, 2023)</li> <li>Payment for costs of examining customer complaints unduly transferred to the supplier (EU, 2024)</li> <li>Buyer requires the supplier to pay for staff or the buyer or fitting out of premises (EU, 2024)</li> </ul>
<p><b>Benefits and advantages</b></p>	<ul style="list-style-type: none"> <li>Imposing general terms and conditions that contain 'unfair' clauses (Falkowski et al., 2017)</li> <li>Tying or bundling, whereby the purchase or supply of a product is tied to another set of products or condition (Falkowski et al., 2017)</li> <li>Purchase-related obligations (Wiewiórowska–Domagalska et al., 2015)</li> <li>A buyer charging a supplier payment to secure or maintain a supply agreement on food products (Barling et al., 2018)</li> <li>A supplier paying for part or all of the promotion or the marketing of food products sold by the buyer (Barling et al., 2018; Wiewiórowska–Domagalska et al., 2015) including the retrospective financing of promotions (Wiewiórowska–Domagalska et al., 2015)</li> <li>Transaction costs (Arpášová &amp; Rajčániová, 2022)</li> <li>Monetary obligations beyond the agreed purchase price (Arpášová &amp; Rajčániová, 2022)</li> <li>Forced discounts (Wiewiórowska–Domagalska et al., 2015)</li> <li>Resale at a loss (Wiewiórowska–Domagalska et al., 2015)</li> <li>Price control (Wiewiórowska–Domagalska et al., 2015)</li> <li>Retrospective price adjustments (Wiewiórowska–Domagalska et al., 2015)</li> <li>Restricted market access/territorial supply constraints (Wiewiórowska–Domagalska et al., 2015)</li> <li>Exclusive supply obligations (Wiewiórowska–Domagalska et al., 2015)</li> </ul>	<ul style="list-style-type: none"> <li>Requests for negotiations or payments on other unrelated terms/those not directly related to the sale of product (AU F&amp;GC, 2023; EU, 2024)</li> <li>Requirement to predominantly fund the cost of a promotion (UK GCA, 2024) bear the cost of discounts (EU, 2024), despite it being unreasonable in the circumstances (AU F&amp;GC, 2023)</li> <li>Running a promotional activity at supplier's cost which varies from that agreed in length, positioning, distribution, or type (UK GCA, 2024)</li> <li>Requests for payments to keep existing business with a retailer (pay to stay) (UK GCA, 2024)</li> <li>Unfair, unreasonable or unexpected charges for marketing or social media support (UK GCA, 2024)</li> <li>Overbuying at promotional price and subsequently selling at full price (AU, F&amp;GC, 2023; UK GCA, 2024)</li> <li>Requests for lump sum payments relating to better positioning in store (not in relation to a promotion) (UK GCA, 2024)</li> <li>Required payment as a condition of stocking, listing, and/or displaying a product (EU, 2024), without an agreement (AU F&amp;GC, 2023)</li> </ul>

Category	Literature	Annual surveys - Codes/regulations
	<ul style="list-style-type: none"> <li>Selective distribution (Wiewiórowska–Domagalska et al., 2015)</li> <li>Geographical segmentation (Wiewiórowska–Domagalska et al., 2015)</li> <li>Unjustified listing fee (Wiewiórowska–Domagalska et al., 2015)</li> </ul>	<ul style="list-style-type: none"> <li>Required payment towards retailer/wholesaler business activities without agreement (AU F&amp;GC, 2023)</li> <li>Payment for advertising or marketing, despite not having been agreed (EU, 2024)</li> </ul>
<b>Contracts</b>	<ul style="list-style-type: none"> <li>Unilateral and retrospective changes to contracts (such as changes to volumes, quality standards and/or price) (Barling et al., 2018; Cafaggi &amp; Iamiceli, 2018; Falkowski et al., 2017; González, 2022; Wiewiórowska–Domagalska et al., 2015)</li> <li>Last minute cancellations concerning perishable products (Barling et al., 2018; Cafaggi &amp; Iamiceli, 2018)</li> <li>Lack of written contracts (Barling et al., 2018; Falkowski et al., 2017)</li> <li>Refusing to put specific terms in writing (Barling et al., 2018; Falkowski et al., 2017)</li> <li>Failure to provide sufficient information about contract terms (Wiewiórowska–Domagalska et al., 2015)</li> <li>Unspecified, ambiguous, or incomplete contract terms (Wiewiórowska–Domagalska et al., 2015)</li> <li>Retroactive misuse of unspecified, ambiguous, and/ or incomplete contract terms (Falkowski et al., 2017; Glöckner, 2017)</li> <li>Frequent and unilateral changes in prices/compensation by the buyer (Falkowski et al., 2017)</li> <li>Contractual imbalances (Barling et al., 2018), including exploitative abuses by exercising pressure during contract negotiations (Glöckner, 2017)</li> </ul>	<ul style="list-style-type: none"> <li>Retrospective changes to supply agreements (AU F&amp;GC, 2023; UK GCA, 2024)</li> <li>Unilateral contract changes by the buyer (EU, 2024)</li> <li>Variation of supply chain procedures without reasonable notice (UK GCA, 2024)</li> <li>Unilateral changes to supply agreements/terms of supply by retailers without reasonable notice (UK GCA, 2024), including short notice (less than 30 day) cancellation of perishable products (EU, 2024)</li> <li>Cancellation of promotion order, or reduction of promotion order by under 10% (AU F&amp;GC, 2023)</li> <li>Refusal of the buyer to provide a written confirmation of a supply agreement (EU, 2024)</li> <li>Undisputed invoices not paid according to agreed terms (UK GCA, 2024)</li> <li>Payment later than agreed terms (AU F&amp;GC, 2023), including later than 30 days for perishable products and 60 days for non-perishable products (EU, 2024)</li> </ul>
<b>Termination</b>	<ul style="list-style-type: none"> <li>Unilaterally terminating a commercial relationship with no notice, or unreasonably short notice, and/or without objectively justified reason (Falkowski et al., 2017; Glöckner, 2017; Wiewiórowska–Domagalska et al., 2015)</li> <li>Unjustified threat of termination (Falkowski et al., 2017)</li> </ul>	<ul style="list-style-type: none"> <li>De-listing (including significant reduction in volume) without reasonable notice (AU F&amp;GC, 2023; UK GCA, 2024)</li> <li>Delisting as a result of a complaint or dispute raised (AU F&amp;GC, 2023)</li> <li>Delisting without a genuine reason (AU F&amp;GC, 2023)</li> <li>Significantly reducing distribution across stores or distribution centres without reasonable notice or a genuine commercial reason (AU F&amp;GC, 2023)</li> <li>Commercial retaliation by the buyer (EU, 2024)</li> </ul>
<b>Other</b>	<ul style="list-style-type: none"> <li>Withholding essential information (Falkowski et al., 2017)</li> <li>Revealing or using commercial or sensitive information (Falkowski et al., 2017; Glöckner, 2017; Wiewiórowska–Domagalska et al., 2015)</li> <li>Paying below marginal value of the product/not receiving a fair price (Falkowski et al., 2017; Markou et al., 2020)</li> <li>Late payments or long payment delays (Wiewiórowska–Domagalska et al., 2015)</li> </ul>	<ul style="list-style-type: none"> <li>Refusal to consider a cost price increase (CPI)/unreasonable delay in agreeing or in implementing an agreed CPI (UK GCA, 2024)</li> <li>Inadequate processes and procedures in place to enable invoice discrepancies to be resolved promptly (UK GCA, 2024)</li> <li>Incurring significant costs because of inaccurate forecasting by retailers (UK GCA, 2024)</li> </ul>

Category	Literature	Annual surveys - Codes/regulations
	<ul style="list-style-type: none"> <li>Late payments for perishable food products specifically (Barling et al., 2018)</li> <li>Lack of market transparency/asymmetric information (Arpášová &amp; Rajčániová, 2022; Barling et al., 2018)</li> <li>Misuse of private labels (Wiewiórowska–Domagalska et al., 2015)</li> <li>Excessively high-volume requirements (Wiewiórowska–Domagalska et al., 2015).</li> </ul>	<ul style="list-style-type: none"> <li>Delays in or not receiving payment when there are disagreements about deliveries, including drop and drive (UK GCA, 2024)</li> <li>Difficulty in securing appropriate EPOS/warehouse data to validate timely payment from retailer (UK GCA, 2024)</li> <li>Infringing branding, packaging designs, advertising, or intellectual property when developing or producing private label products (AU F&amp;GC, 2024)</li> <li>Material changes to supply chain procedures without notice or compensation (AU F&amp;GC, 2024)</li> <li>Range decisions not in accordance with retailer/wholesaler’s ranging principles (AU F&amp;GC, 2024)</li> <li>Using confidential information for a purpose other than the purpose for which it was disclosed (AU F&amp;GC, 2023)/misuse of trade secrets (EU, 2024)</li> </ul>

Four additional points noted in the literature about UTPs in the food and agriculture supply chain that are important to highlight with respect to this project include:

1. Perishable goods, particularly where primary producers supply directly to retailers, are recognised as being more at risk for experiencing unfair trading practices due to the time constraints of finding alternative markets should that produce be rejected (e.g., Piras et al., 2018).
2. Judging what is fair or unfair can often be difficult, as the same practice can be perceived differently in different situations (Arpášová & Rajčániová, 2022) and/or as normal competitive behaviour (Falkowski et al., 2017).
3. There are practices that could still be considered grossly unfair, even if both parties ‘agree’ to them (González, 2022). This is important to note with respect to both the EU *Directive on Unfair Trading Practices* ‘grey unfair trading practices’ and the Food and Grocery Code’s wording that makes certain practices allowable if agreed by both parties (See Report 4 for more on this).
4. The market imbalances/power dynamics considered as underlying factors behind UTPs also creates a situation whereby UTPs may not be reported for fear that even reporting these could damage a commercial relationship and result in termination (see, for example, Falkowski et al., 2017; Taylor et al., 2019; Wiewiórowska–Domagalska et al., 2015; but also Devin & Richards, 2018 and additional commentary in Section 5).

## 4. Unfair trading practices and the connection to FLW

As noted in Report 1, there is growing awareness of the relationship between UTPs and FLW in research, often stemming from the collateral impacts or by-products of UTPs (Piras et al., 2018; Wunder et al., 2018). Of particular relevance to this project too is the work that has been done which makes an explicit connection between UTPs to food waste (Aramyan et al., 2021; see, for example, Bradshaw, 2020; Bradshaw & Wentworth, 2024, pp. 30–31; EBRD, 2021; Ghosh & Eriksson, 2019; Piras et al., 2018, 2021; Rolle et al., 2019; Taylor et al., 2019; WRAP, 2015, 2017; Wunder et al., 2018) which is largely emerging out of the EU and, to an extent, the UK. As highlighted by Wunder et al. (2018, p. 65-66), for example, the “European Parliament’s June 2016 resolution on UTPs in the food supply chain (2015/2065(INI)) states in article L that UTPs may result in overproduction and food waste”. They go on to suggest that UTPs can play a “significant role in increasing food waste at food manufacturing and agricultural stages – for example when suppliers are penalised for not delivering an agreed amount of product there are significant incentives to over-produce food” (see also, 3Keel LLP, 2021b, p. 6). Further to this, Piras et al., (2018) and Taylor et al. (2019) explicitly highlight that addressing UTPs is a necessary prerequisite to addressing FLW.

With respect to FLW and UTPs more specifically, Table 2 summarises the fairly limited literature that makes an explicit link between what can be viewed as UTPs and FLW. This table draws on the same categories utilised in Table 1 for consistency.

Table 2. UTPs linked to FLW

Category	Literature
<b>Costs and risks</b>	<ul style="list-style-type: none"> <li>Take back agreements (relating to unsold products, including those past sell-by date) (3Keel LLP, 2021b; O’Connor et al., 2022).</li> <li>Payments only for quantity sold, not quantity ordered (3Keel LLP, 2021b)</li> <li>Where weaker party accepts more of the cost and/or risk for overproduction and/or oversupply (Bradshaw, 2020; Wunder et al., 2018).</li> </ul>
<b>Benefits and advantages</b>	<ul style="list-style-type: none"> <li>Exclusivity terms (Bradshaw &amp; Wentworth, 2024).</li> </ul>
<b>Contracts</b>	<ul style="list-style-type: none"> <li>Contracts that enforce stringent conditions for fulfilment (3Keel LLP, 2021b).</li> <li>Unilateral changes to contracts (3Keel LLP, 2021b; Piras et al., 2018; Wunder et al., 2018), including where a buyer can make last minute changes to the volume ordered, or the cancellation of the order (Piras et al., 2018; 2021; Taylor et al., 2019), which may be done to exploit cheaper offers from another supplier (Bradshaw &amp; Wentworth, 2024).</li> <li>Lack of written contracts (3Keel LLP, 2021b; Piras et al., 2018; Taylor et al., 2019; Wunder et al., 2018).</li> <li>Late and/or last minute cancellation of order (Colbert, 2015; O’Connor et al., 2022; Piras et al., 2018; Reynolds et al., 2020; Taylor et al., 2019).</li> <li>Lack of formal contract (Taylor et al., 2019), such as an informal contract which can lead to buyers altering orders at the last minute without accountability.</li> <li>Contract clauses that require high level of product availability without the guarantee of purchase, leading to overproduction (Wunder et al., 2018).</li> <li>Contractual clauses prohibiting the supplier from finding a secondary buyer due to cosmetic specifications (Wunder et al., 2018).</li> <li>Requiring suppliers to deliver full quantities on time, with penalties for non-delivery (Bradshaw &amp; Wentworth, 2024).</li> </ul>
<b>Termination</b>	<ul style="list-style-type: none"> <li>Being removed as a supplier for non-commercial reasons (i.e., de-listing) (Bradshaw &amp; Wentworth, 2024).</li> </ul>
<b>Other</b>	<ul style="list-style-type: none"> <li>Over-ordering due to lack of incentive for accurate forecasting (3Keel LLP, 2021b).</li> <li>Poor demand forecasting (Colbert, 2015; Taylor et al., 2019) or forecasting errors (Piras et al., 2018, p. 15).</li> <li>Buyer purchasing only minimum order quantities (Piras et al., 2018).</li> </ul>

Category	Literature
	<ul style="list-style-type: none"> <li>• Over-optimistic projections (Piras et al., 2018).</li> <li>• Producers grow to forecasts demanded by specific buyers, but the buyers can refuse to take the product (3Keel LLP, 2021b).</li> <li>• Quality specifications, including where there is an inconsistent application of these specifications in order to manage oversupply and reject products, thereby shifting responsibility for excess to producers (Colbert, 2015; Piras et al., 2018; Taylor et al., 2019; Wunder et al., 2018; see also, Colbert, 2017; Colbert &amp; Stuart, n.d.; O'Connor et al., 2022; Bradshaw &amp; Wentworth, 2024).</li> <li>• Overly strict minimum of life on receipt criteria and/or where minimum life on receipt criteria is used to reject produce that the buyer has decided cannot be sold because of decreased demand or inaccurate forecasting (Bradshaw &amp; Wentworth, 2024; Colbert, 2017; Piras et al., 2018; Taylor et al., 2019; Wunder et al., 2018).</li> <li>• Confusion around date labelling, which can lead to incorrect rejection as per minimum life criteria (Wunder et al., 2018).</li> <li>• Lack of/poor data sharing (Piras et al., 2018), including with respect to forecasts which leads to 'demand amplification' (Taylor et al., 2019). This typically occurs when many suppliers are, in essence, 'competing' to supply to a limited number of retailers, and where a small increase in the predicted demand by the retailer can see all of these suppliers increase their supply.</li> <li>• Over-reliance on a single buyer, whereby suppliers overproduce to reduce the risk of failing to meet required order quantities and in turn, be de-listed by the retailer (Taylor et al., 2019).</li> <li>• Food safety regulation, which while necessary, can result in overcautious approaches (e.g., in relation to food donations) (Taylor et al., 2019).</li> <li>• Product overstocking (Piras et al., 2018).</li> </ul>

While Table 2 illustrates these practices individually, it is important to highlight that the literature recognises many of these practices are interconnected and compounded by the factors that make food and agriculture supply chains more susceptible to UTPs (see Section 3). For example, as Taylor et al. (2019, p. 7) highlight, “perishable products were more often wasted within the supply chain, because of supply and demand imbalances and poor information sharing. The limited scope for finding alternate markets as a consequence of perishability and short life also was found to be problematic”. In a similar vein, the literature also highlights that, while UTPs may occur, it is not necessarily the UTP in and of itself that causes FLW, but rather the market power imbalances noted in Section 3. For example, both Piras et al. (2018) and Taylor et al. (2019) note that even in instances where unfair breaches to contracts do not occur, imbalances in bargaining power can still create situations in which suppliers overproduce in order to avoid the risk of losing business. Both Piras et al. (2018) and Taylor et al. (2019) acknowledge that where suppliers cannot find a market for this oversupply, food waste may occur.

Table 2 shows that there is some literature that explicitly connects UTPs to FLW. However, we observed that within this body of work there is limited empirical research which actually considers the extent to which UTPs lead to FLW and/or whether or not regulating against UTPs reduces FLW.

Relatedly, data about the extent to which trading practices cause FLW is lacking. In Australia, addressing unfair trading practices was modelled as potentially being able to lead to a 4% reduction in 2030 of total (edible and inedible) food waste (see FIAL (2021); Appendix 6: National Food Waste Strategy Feasibility Study, Edge Environment, p. 6). However, there is no primary data to support this.

With respect to the EU, as Taylor et al., (2019, p. 5) acknowledged “[t]he impacts of UTPs are difficult to quantify, in part because impact data is not collected, either at MS [member state] or EU level”. They suggest the reason for this lack of data is: (1) because of the fear of retaliation prevents suppliers for disclosing poor commercial practices; (2) the “involved nature of collecting evidence to establish whether or not an UTP has occurs” (p. 5) and the sensitive nature of collective this evidence; and (3) the lack of data collection or publication of food waste arising in the supply chain which “has hampered insight into the impact of UTPs” (p. 5).

Taylor et al. (2019, p. 6) also acknowledge that the definition and/or understanding of 'food waste' may also impact the ability to determine the level of FLW linked to UTPs:

*In cases where a planted crop is surplus to requirement, and is not harvested, it is not currently considered to be 'food waste' under the EU Waste Framework Directive (EU 2008). The risk here is that where a UTP makes it uneconomic for a farmer to harvest part or all of his crop, this loss is not considered as food waste, despite the fact that the same environmental resources have gone into planting and growing it.*

These kinds of factors would, arguably, be relevant in the Australian context as well, given the existence of market power imbalances in Australia and likely the same technical difficulties regarding data collection (see Report 4 for more information on some of the existing data platforms in Australia).

Since 2023, the European Commission has explicitly asked survey respondents (i.e., suppliers covered by the Directive across different stages of the agricultural and food supply chain) in its annual survey about the impact of the EU *Directive on Unfair Trading Practices* on reducing food waste (European Commission, 2024). In the 2024 annual survey, 22.7% of respondents highlighted that they thought the EU *Directive on Unfair Trading Practices* reduces food waste, however, 40.8% believed it had no impact, with a further 33.8% responding that they did not know if it had an impact. The remaining 2.6% of respondents thought the EU *Directive on Unfair Trading Practices* increased food waste. Whilst useful, this high-level data does not highlight which specific practices participants believed contributed to FLW or in what ways the EU *Directive on Unfair Trading Practices* addressed food waste.

## 5. Mechanisms to address UTPs (including those specific to FLW)

Whilst the literature review conducted for this phase primarily highlighted many mechanisms to reduce FLW more broadly, the review also revealed some literature pertaining to mechanisms aimed at addressing UTPs (including those specific to FLW). However, it is important to premise that these are often recommendations or suggestions based on an understanding of UTPs or practices contributing to FLW, rather than being empirically derived:

*... there is a lack of evidence to demonstrate the efficacy of these interventions. This is partly because some approaches have not yet been implemented, but there is also a lack of research as to which factors have the biggest impact on farm-level waste (Bradshaw & Wentworth, 2024, pp. 30–31).*

This section focuses specifically on mechanisms (or interventions) highlighted as being capable of addressing UTPs (and specifically those UTPs connected to FLW), rather than mechanisms addressing FLW more broadly. An analysis of the literature suggests that the proposed mechanisms to address UTPs fall into three categories: (1) those that address the factors creating UTPs; (2) those that target a UTP specifically; and/or (3) those that address the surplus that UTPs can create. These mechanisms can further be classified as either government-led regulatory responses and other forms of regulatory responses. Again, it is important to premise that these solutions are often inferred via the literature, and typically, have not been empirically tested.

The leading contributions on mechanisms to address UTPs (including those relevant to FLW) include Taylor et al., (2019); Piras et al., (2018) Wunder et al., (2018), Bradshaw and Wentworth (2024) and also, the work of 3Keel LLP (2021). These scholars have provided excellent syntheses of existing research in this space and as such are a useful source for further reading. Falkowski et al., (2017) also provides a collection of articles addressing UTPs in the food supply chain and is an additional recommended reading.

Table 3. Mechanisms to address UTPs related to FLW

	Factors creating UTPs	UTPs specifically	Surplus created by UTPs
<b>Government-led regulatory responses centred on changes to regulatory instruments and institutions</b>	<ul style="list-style-type: none"> <li>Prohibiting applying cosmetic standards beyond legally required standards (Bradshaw &amp; Wentworth, 2024).</li> <li>Regulate to improve demand forecasting/ address lack of transparency (Bradshaw &amp; Wentworth, 2024; Wunder et al., 2018), including around pricing (Barling et al., 2018).</li> <li>Changes to competition laws and regulation to which may prohibit and/or prevent the ability for 'non-antagonist' commercial relationships to develop (Barling et al., 2018).</li> <li>Legislation to address abuse of market power and/or market concentration (typically via competition laws) (Biely et al., 2018; Bos-Brouwers et al., 2020; Csirszki, 2021; V. I. Daskalova, 2018; Falkowski et al., 2017; Glöckner, 2017; Herzberg et al.,</li> </ul>	<ul style="list-style-type: none"> <li>Sanctions against actors who breach industry codes governing UTPs (3Keel LLP, 2021b).</li> <li>Legislation to prevent unfair trading practices (3Keel LLP, 2021b; Bradshaw, 2020; Bradshaw &amp; Wentworth, 2024; Glöckner, 2017; Malnar et al., 2021; Wunder et al., 2018), particularly addressing business to business relationships (Arpášová &amp; Rajčániová, 2022) and/or the food supply chain specifically (Csirszki, 2021; Parliament of Australia, 2023; Piras et al., 2018; WWF UK, 2021).</li> <li>Strengthen legislation on unfair contract terms (Parliament of Australia, 2023).</li> <li>Creation of an independent body to investigate UTPs (WWF UK, 2021).</li> </ul>	<ul style="list-style-type: none"> <li>Powers to fund producer groups to pursue joint business models, such as short supply chains or alternative markets (Bradshaw, 2020).</li> <li>Changes to competition laws and regulation to which may prohibit and/or prevent the ability for 'non-antagonist' commercial relationships to develop (Barling et al., 2018).</li> <li>Harmonised policies on food redistribution (Vittuari et al., 2016).</li> <li>Legislation and/or tax incentives that support food donations (Harduth, 2017; Herzberg et al., 2023; Parliament of Australia, 2023; Vittuari et al., 2016).</li> </ul>

	Factors creating UTPs	UTPs specifically	Surplus created by UTPs
	<p>2023; Swinnen et al., 2021; Wunder et al., 2018).</p> <ul style="list-style-type: none"> <li>• Sector inquiries/investigations (V. I. Daskalova, 2018; Parliament of Australia, 2023; Wunder et al., 2018), including the powers to investigate (Cafaggi &amp; Iamiceli, 2018; Wunder et al., 2018).</li> <li>• Investigations into excessive pricing (V. I. Daskalova, 2018).</li> <li>• Divestiture (V. I. Daskalova, 2018).</li> <li>• Merger control (V. I. Daskalova, 2018).</li> </ul>	<ul style="list-style-type: none"> <li>• Providing greater clarity on what constitutes unconscionable conduct (Parliament of Australia, 2023).</li> <li>• Legislation to prevent take-back agreements (Brancoli et al., 2019).</li> <li>• Powers to define the content of contracts, as a way to minimise the financial and contractual risks of overproduction (Bradshaw, 2020; Moraes et al., 2021).</li> <li>• Legislate the requirement for contracts to include a designated price (Walton, 2023).</li> <li>• Enforcement of UTP legislation (Barling et al., 2018; Vittuari et al., 2016; Wiewiórowska–Domagalska et al., 2015; Wunder et al., 2018; WWF UK, 2021) and mechanisms to access justice (Wunder et al., 2018).</li> <li>• Promotion of the use of block-based smart contracts (Kononets et al., 2022)</li> <li>• Mandated industry codes (Coleman et al., 2021; Parliament of Australia, 2023; Pringle, 2021; Wunder et al., 2018).</li> </ul>	
<b>Other regulatory responses</b>	<ul style="list-style-type: none"> <li>• Support the bargaining power and/or cooperation of smaller businesses within the food supply chain (Falkowski et al., 2017; Markou et al., 2020).</li> <li>• Loosening cosmetic standards (Bradshaw &amp; Wentworth, 2024; Colbert, 2015).</li> <li>• Improved demand forecasting techniques (Bradshaw &amp; Wentworth, 2024).</li> <li>• Collaboration and information sharing to increase forecasting accuracy (Bradshaw &amp; Wentworth, 2024; Colbert, 2015).</li> <li>• Pre-competitive spaces that enable collaboration (Pringle, 2021).</li> <li>• Industry consolidation, as a way to shift power within the supply chain (Parliament of Australia, 2023).</li> </ul>	<ul style="list-style-type: none"> <li>• Industry code of conduct (3Keel LLP, 2021b).</li> <li>• Creation of independent body to investigate infringement of UTPs (3Keel LLP, 2021b).</li> <li>• Voluntary agreements (3Keel LLP, 2021b).</li> <li>• Block-chain technology, which could be used to create smart contracts (Kononets et al., 2022).</li> <li>• Guaranteeing the purchase price of a certain percentage of a supplier's crop (Colbert, 2015).</li> <li>• No threats to obtain unjustified advantage (Falkowski et al., 2017).</li> <li>• Fully compensating supplier for last minute order adjustments (Colbert, 2015).</li> </ul>	<ul style="list-style-type: none"> <li>• Creation of alternative markets/business models (Bradshaw, 2020; Wunder et al., 2018; WWF UK, 2021), such as whole crop purchasing (see, for example, Burgos et al., 2017; Huang et al., 2021), which has been noted as a way to share risks and benefits (Pringle, 2021), value-adding (Colbert, 2015), or regional food hubs (Parliament of Australia, 2023).</li> <li>• Collaboration between supply chain actors (Pringle, 2021).</li> <li>• Increase food donations (Pringle, 2021; Vittuari et al., 2016).</li> <li>• Investing in technologies to improve shelf-life (Colbert, 2015).</li> </ul>

	Factors creating UTPs	UTPs specifically	Surplus created by UTPs
		<ul style="list-style-type: none"> <li>• Paying fair price (WWF UK, 2021).</li> <li>• Change contractual arrangements to share risk more equitably (Falkowski et al., 2017).</li> <li>• Use written contracts (Falkowski et al., 2017).</li> </ul>	<ul style="list-style-type: none"> <li>• Helping growers access local or secondary markets (Colbert, 2015).</li> </ul>

The literature has also engaged with identifying the limitations and issues with the mechanisms outlined in Table 3. This includes commentary around the effectiveness of addressing cosmetic/quality standards, improving forecasting, voluntary agreements (including market-based responses aimed at collaboration and information sharing), industry codes, changes to contracting practices, and regulation explicitly addressing UTPs. These are briefly discussed below.

In relation to cosmetic/quality standards, Bradshaw and Wentworth (2024) summarise the existing literature and acknowledge that studies show consumers are unwilling to purchase produce perceived as being suboptimal, which in turn may impact political support for changing cosmetic standards and undermine the effectiveness of altering cosmetic standards, as consumers will continue to select certain products on the basis of appearance.

Bradshaw and Wentworth (2024) also summarise that attempts to improve forecasting can be hampered by the fact that: (1) buyers do not typically bear the costs of the overproduction resulting from inaccurate forecasting, and therefore there is little incentive to invest in resources to improve this; (2) it is challenging to accurately predict how much produce is required due to seasons, weather, and special occasions; (3) there is currently no single demand forecasting technique used in practice; (4) the nature of cycles of food production mean that forecasting is required well in advance and cannot be rapidly adjusted. In a similar vein, it has also been recognised that access to information may be limited by the fact that such information is scarce, and both difficult and costly to collect (Falkowski et al., 2017).

Others are highly critical of the ability of voluntary agreements or multi-stakeholder initiatives to address UTPs (e.g., Barling et al., 2018; iPES-Food, 2023), largely because they fail to address the underlying market imbalances that led to UTPs, and because they tend to be “biased in favour of retailers and manufacturers of branded products, with primary producers being underrepresented” (Bradshaw & Wentworth, 2024; Wunder et al., 2018; see also, Piras et al., 2018). It has also been suggested that competing commercial and competitive interests, and a lack of trust between supply chain actors (due to market imbalances) create significant barriers for effective collaboration (Herzberg et al., 2023; Piras et al., 2018; Pringle, 2021). Further to this, Bradshaw and Wentworth (2024) summarise that to date, there is a lack of examples of how collaboration and information sharing occur in practice, thus it is unclear how this could work and/or result in lower levels of FLW.

Authors have also been critical of industry-based codes (voluntary or mandated through regulation), noting their effectiveness may be limited due to ambiguities in the codes, lack of resourcing and staffing, limited scope, lack of awareness of what the Code covers, and/or the fear of retribution (Piras et al., 2018; Pringle, 2021; Taylor et al., 2019; Wunder et al., 2018). To make these codes more effective, it has been suggested that these require: (1) efficient resources to investigate infringements; (2) deterrents to reduce breaches (such as public disclosure of investigations or significant penalties); (3) funding for the adjudicator to be provided by an industry level, rather than funded by the retailers; (4) a mechanism to protect the anonymity of businesses making a complaint; and (5) coverage of direct and indirect suppliers (Taylor et al., 2019; see also, Barling et al., 2018; Falkowski et al., 2017; Wunder et al., 2018; WWF UK, 2021). Within the Australian context, it has also been suggested that the current voluntary codes need to be mandated, rather than voluntary (e.g., Parliament of Australia (2023), as well as the various inquiries noted in

Report 1. NB. Measures to make the Food and Grocery Code mandatory were included as part of the Treasury Laws Amendment (Fairer for Families and Farmers and Other Measures) Bill 2024 which was introduced in parliament on November 27, 2024).

In relation to contracts, Falkowski et al., (2017) stipulate that suggestions to improve contracting practices “as a way to overcome UTPs might well have generated too high expectations” (p. 82), due to the limitations arising from the conditions of negotiations (such as asymmetrical bargaining power), the limits and costs of writing detailed contracts, and the inflexibility these may create. In other words, regulations that specify particular contracting practices may not be practical or capable of redistributing power and so may not, ultimately, be followed by supply chain actors. Further to this, research acknowledges UTPs can occur outside of contracts, meaning any regulation addressing contracts specifically may be limited (Arpášová & Rajčániová, 2022; Falkowski et al., 2017). For instance, legislation that is specific to the terms that may be included in a contract, or which allows certain practices provided they are contractually agreed to may not effectively address UTPs. In a similar vein, the analysis of the literature summarised in Tables 2 and 3 of this report suggest that the ‘UTPs’ noted as contributing to FLW (Table 3) are not necessarily captured by the UTPs noted as occurring in the food and agriculture supply chain (Table 2). To explain this further, many of the UTPs noted as contributing to FLW were categorised as ‘other’ in Table 3 and therefore fall outside of UTPs that are currently known and/or regulated in international contexts (as per Table 2). Further analysis of this, drawing on information across this entire project, will be provided in Report 5.

Similarly, authors are critical of whether approaches to regulate UTPs are effective, as these typically fail to address the underlying imbalance in bargaining power between suppliers and retailers (e.g., V. Daskalova, 2020; Wunder et al., 2018). Daskalova (2020, p. 47) put this perspective as follows:

*UTP legislation, including the latest development – Directive 2019/633 on unfair trading practices in business-to-business relationships in the agricultural and food supply chain – may be a step in the right direction, but generally does not offer a comprehensive solution. Importantly, UTP laws do not address the issue of concentration on purchasing markets, concerns about unfair prices, or possible structural bottlenecks. Vigorous enforcement may have a deterrent effect, but it is no substitute for competition law tools such as sector inquiries, investigations into excessive pricing, the possibility to impose structural remedies such as divestiture and compulsory dealing, and merger control. This is where competition law could play a role – by ensuring deconcentrated markets in which both buyers and sellers have a choice of contracting partners.*

Put differently, narrow legislative interventions are perhaps not able to address the structurally-based power imbalances within supply chains that cause UTPs and instead more comprehensive and far-reaching regulatory changes are required that seek to redistribute power. Csiszki (2021) similarly observes that existing competition laws (noted within the EU context) do not adequately address the power imbalance related issues specific to food supply chains.

Others have focused on specific weaknesses within, or related to, legislative responses, acknowledging that they are not effective where there is a lack of transparency and/or awareness of the legislation, where fear of commercial retaliation limits complaints, and where there is a lack of enforcement (e.g., Cafaggi & Iamiceli, 2018; Wiewiórowska–Domagalska et al., 2015; Wunder et al., 2018). There are also concerns regarding unintended consequences associated with regulation addressing UTPs and specifically whether this kind of regulation would create new problems and/or inefficiencies (Falkowski et al., 2017). Potentially, such issues could be mitigated through the design of the regulation. In some respects, these potential deficiencies also stem from the problem with introducing legislative interventions that seek to slightly alter trading practices without addressing the power imbalances as the root cause of UTPs.

Related to enforceability specifically, there has also been calls to ensure regulators are adequately resourced, have investigative powers, and the ability to fine those engaging in UTPs (Vittuari et al., 2016; Wunder et al., 2018). For example, a number of authors

suggest a key element of any action used to address UTPs is to ensure any regulation is effectively enforced (Barling et al., 2018; Cafaggi & Iamiceli, 2018; V. Daskalova, 2020; Wiewiórowska–Domagalska et al., 2015). This echoes the findings of a recent study investigating the effectiveness of laws banning food waste in the United States, which found that despite political support for these laws, they were not achieving the desired results due in part to a lack of enforcement (Anglou et al., 2024). Others have suggested that prevention of retaliation needs to be the “main feature of any system designed to address UTPs” (Piras et al., 2018, p. 8)

Conversely, some authors also recognise that ‘positive’ outcomes of market power and UTPs. As Bradshaw and Wentworth (2024) summarise, retail power can drive positive outcomes, including by enabling efficient production. This is also highlighted by Swinnen et al., (2021) and Sexton (Sexton, 2017 cited in; Falkowski et al., 2017), who acknowledge that market power can create efficiencies, including those stemming from vertical integration. For instance, vertical integration can allow retailers to process fruit and vegetables into additional products (discussed in Report 4 in relation to whole-of-crop purchasing). Further to this, as Markou et al., (2020) highlight, UTPs do result in economic benefits for certain actors within the food supply chain, though they go on to highlight that whilst they can create short term profits, these need to be considered against the longer-term effects including the sustainability of supply chain relationships.

Finally, the literature examining interventions for UTPs commonly finds that UTPs can only effectively be addressed by multiple interventions as opposed to a single mechanism (e.g., Barling et al., 2018; Cafaggi & Iamiceli, 2018; Falkowski et al., 2017). As Falkowski et al., (2017, pp. 82-83) summarise, “Giving access to information cannot do it all... Contracts cannot do it all... Private codes of conduct cannot do it all... Formal public regulation cannot do it all either”. Thus, the literature suggests there is a need to implement different tools, drawing on a combination of hard and soft laws.

## 6. Conclusion

In conclusion, the scope of this report was limited to focus on unfair trading practices (UTPs) within the context of food and agriculture supply chains and FLW more specifically, rather than the broad literature on FLW more generally. In doing so, this report considered the literature relating to: (1) UTPs in the food and agriculture supply chain more broadly; (2) UTPs in relation to FLW more specifically; and (3) mechanisms outlined in the literature to address UTPs in the food and agriculture supply chain. Tables 1, 2, and 3 provide a synthesis of the existing literature related to these points.

Overall, this report underscores that while food supply chains are particularly susceptible to UTPs and that the literature makes a connection between UTPs and FLW more specifically, there is little empirical evidence to date about the amount of FLW created by UTPs in general, as well as with respect to specific UTPs. Echoing Wunder et al. (2018, p. 71), it is acknowledged that “more quantitative data and research is needed to understand the volume of food waste resulting from UTPs”. However, as they go on to suggest, “the lack of data linked to particular UTPs and food waste is symptomatic of the nature of UTPs and the reluctance of those affected to share data on the impacts”. This aligns with our own findings, discussed in Report 3, whereby while attempts were made to ask participants about the level of FLW connected to UTPs shared during Phase 2 of this project, we found that such data does not exist or was not shared. It is also evidenced from this review that Australian studies on UTPs are lacking.

Furthermore, the literature supports what this project also finds which is that there is not a one-size, fits all approach to addressing UTPs in the food supply chain. As noted, with particular reference to Tables 2 and 3 of this report, it can be suggested that the ‘UTPs’ noted as contributing to FLW (Table 3) are not necessarily captured by the UTPs noted as occurring in the food and agriculture supply chain (Table 2). Further analysis of this, drawing on information across this entire project, will be provided in Report 5.

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