

Identifying business-to-business unfair trading practices in the food supply chain: the case of Cyprus

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Abstract

Unfair Trading Practices (UTPs) between businesses in the food supply chain have a significant impact on the various stakeholders involved, and on the environment. So far, no attempt has been made at the Member State level for the identification of UTPs in the food supply chain and their impact on the relevant stakeholders. This study drew on this gap and attempted to identify the UTPs that exist in the Cypriot food supply chain, assess their impact on the involved stakeholders and provide guidelines that will assist the transposition of EU relevant Directive to the national law. To achieve this goal, the study was based on a quantitative survey of a representative sample of businesses using a specific questionnaire. The results showed that particular UTPs do appear in the food supply chain with a different frequency, while the majority of businesses have been victims of UTPs in the last five years. Notably, the estimated cost of UTPs as a percentage of the business annual turnover is considered important ranging from 5.7% for retailers to 31.9% for farmers. Thus, most participants agree that UTPs in the agricultural food sector should be regulated by national legislation. We argue that the national legislation for UTPs should be a mix of policies that integrate private, administrative and judicial methods of monitoring and enforcement. Policy and decision makers should seek to reinforce the role and the bargaining power of small businesses in the food supply chain. This might be accomplished through the development of efficient producers' organizations, short food supply chains, interbranch organizations and strategic partnerships.

Keywords: *Unfair Trading Practices, Business-to-Business, Food Supply Chain, Legislation, European Union, Cyprus.*

1. Introduction

The agricultural food chain (agri-food chain) involves several actors, events and processes; from the agricultural production of food, to processing, trading, packaging, distribution and consumption (Schipmann and Qaim, 2011; Hender-son and Isaac, 2017). At each stage of this chain

(literary from farm to fork) several actors interact, various transactions take place and contractual agreements come in effect (Bellemare and Novak, 2017; Swinnen and Maertens, 2007).

Small farmers and medium-sized producers in the agri-food sector often report abuses coming from their stronger trading counterparts, such as processors and retailers (Popović et

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al., 2018; Rossi, 2015). Unfair trading practices (UTPs) in the agri-food chain, often involve big retailers and operators bullying their smaller counterparts. As a result, farmers do not get a fair price for what they produce and are not acknowledged for the crucial role they play in the agri-food chain, and in the society. These price adjustments from producer to wholesale and retail level are an important characteristic of the functioning of markets (Capitanio *et al.*, 2019).

The European Commission (EC) has begun to discuss UTPs as a possible problem in the food supply chain from 2009, and in 2013 adopted the Green Paper on UTPs on business-to-business (B2B) in food and non-food supply chain (Falkowski *et al.*, 2017). The Green Paper makes a preliminary assessment of the problems that UTPs pose in business relations along the food and non-food supply chain, including the issue of effective enforcement of existing national rules and the consequences that will result in the single market. The EC has recognized that UTPs are quite common and may have a detrimental effect, especially on small and medium-sized enterprises (SMEs) in the food supply chain.

The food supply chain is particularly vulnerable to the UTPs due to significant differences in bargaining power, with individual farmers posing as the weakest in the food chain. UTPs can occur at any stage in the supply chain between the various actors but are more prevalent at later stages in the supply chain (downstream), where there is a greater concentration of power among retailers and some multinationals. UTPs may have significant (negative) impacts on marketing actors, consumers and the environment (e.g. food waste). However, these practices make a profit by nature, and thus ensure short-term profits to those who apply them to the detriment of the other actors in the supply chain. In the longer term, actors in the supply chain must have sustainable supply relationships and ensure that supply chain interruptions are prevented, in order to compete and continue to respond to ever-changing consumer demands (European Economic and Social Committee, 2016).

In the beginning of 2018, the EC completed the review of developments in the UTPs in the Member States (MS) and the private sector and

concluded that the expectations of 2016 in identified areas of improving the MS legislation on UTPs and voluntary initiatives of the agricultural food industry were not met (Falkowski *et al.*, 2017). In view of this finding, the Proposal for a Directive of the European Parliament and of the Council on UTPs in relation to undertakings in the food supply chain, COM (2018) 173 final, 2018/0082 (COD), was adopted on April 12, 2018, which establishes a list of prohibited UTPs, a minimum level of protection against such practices throughout the Union and provides for arrangements for co-ordination between law enforcement authorities.

According to the EC, UTPs in B2B relationships in the food supply chain are 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” (European Commission, 2018).

Gerdoci *et al.* (2015) emphasized the role of trust and behavior in shaping exchange relationships in the agri-food chain. They explain that by improving the coordination and cooperation with specialized farmers and farmers’ associations, they may lower volume uncertainties, transaction costs and shortening of the supply chains.

The European Union (EU) Proposal for a Directive on UTPs covers raw agricultural products, including fishery products and products processed from agricultural products, and concerns anyone involved in the food supply chain, be it a retailer, a food processor, a wholesaler, a producers’ cooperative, a producers’ organization or an individual producer involved in any of the UTPs listed in the Proposal. The Proposal aims to eliminate a series of distortions and to lay down the framework for the application of fair conditions to trade between actors in the agricultural food sector within the EU. In accordance with Article 3 of the Proposal, specific commercial practices are prohibited, such as the delay of payments for perishable foods beyond 30 calendar days, the cancellation of orders for perishable food with a short warning that prevents the supplier from finding an alternative for the use of these products, the unilateral and retroactive change of the terms of the supply agree-

ment, and the payment for wasted or unsold food products that occur at the buyer's premises and which was not caused by negligence or fault of the supplier. In addition to banning these practices, MS ensure that certain commercial practices, such as the return of unsold food from the buyer to the supplier, the imposition of promotional or marketing costs to the supplier by the buyer are prohibited, unless agreed in clear and uncontested terms at the time of the conclusion of the supply agreement.

As regards the current legal framework in force in Cyprus related to UTPs, this includes the "Protection of Competition Law of 2008 and 2014" and "Anti-Late Payments in Commercial Transactions Law of 2012". According to Article 6 (2) of the Protection of Competition Law of 2008 and 2014 "it is prohibited the abuse by one or more undertakings of the relationship of economic dependence in which one or other undertakings holding a position of customer, supplier, producer, dealer, distributor or commercial partner, even with regard to a certain type of product or service, and does not have an equivalent alternative. Such abusive exploitation of economic dependence may consist in particular in the imposition of arbitrary trading conditions, the application of discriminatory treatment, or the sudden and unjustified interruption of long-term commercial relations". For the purpose of alignment with the EU Act on "Directive 2011/7/EU of the European Parliament and of the Council of February 16, 2011 on combating late payment in commercial transactions", the House of Representatives ratified the "Anti-Late Payments in Commercial Transactions Law of 2012", which includes provisions in the event of late payment in commercial transactions.

Despite the important negative impacts of B2B UTPs in the supply chain, following an extended search in academic databases (e.g. ScienceDirect, Scopus, etc.), we found no published studies dealing with the identification of B2B UTPs in the food supply chain in Europe or elsewhere. However, recently, Fourgoux (2018) presented the proposal of the EC act to ban UTPs in the food supply chain. The initiative aims to ensure fairer treatment for small and medium sized food and farming businesses across the EU MS.

Earlier work of Ciliberti and Frascarelli (2014) described the measure to introduce mandatory contracts for the sale of agricultural and food products and its legal framework in Italy (article 62 of law 27/2012). They presented an analysis of the theoretical background on the issue of contracts, the market power and anti-competitive practices in the agri-food system. According to their findings, following an initial assessment of the effects produced by the measure, it introduced a greater transparency in trading between various actors within the agri-food supply chain.

With reference to the Proposal for a Directive on UTPs in business relations in the food supply chain, the Ministry of Agriculture, Rural Development and Environment (MARDE) of the Republic of Cyprus, initiated a public consultation process to elaborate on a national law governing the relations of operators in the agricultural food sector. The national law will incorporate the guidelines and provisions of the Proposal for a Directive on UTPs and any other specificities that are recorded in this study.

Taking into consideration the foregoing, the goal of this study was threefold: (1) to identify the B2B UTPs in the Cyprus food supply chain; (2) to assess the impact of UTPs on the involved businesses; and (3) to provide guidelines that will assist the transposition of EU Directive to the national law. To the best of our knowledge, no attempt has been made so far at MS level for the identification of B2B UTPs in the food supply chain and this is the main contribution of this study to the European and international literature, using Cyprus as a case study.

2. Methodology

2.1. Study area

The study area was Cyprus, the third largest island in the Mediterranean Sea, with a total area of 9,251 km². This study refers to the territory under the control of the Republic of Cyprus, which covers an area of ca. 5,760 km² and comprises five main districts, namely Nicosia (the capital), Limassol, Larnaca, Paphos and Famagusta (or Ammochostos).

The Cypriot agricultural sector contributes around 2% to Gross Domestic Product (GDP) and 4% to labor force, while the value of raw agricultural products exported accounts for ca. 11% of the total domestic exports (CYStat, 2017). The most important crop products are potatoes, citrus, vegetables and grapes, whereas meat (pork, beef, poultry and sheep and goats) and milk (cow and sheep and goats) are the most significant livestock products consumed (Adamides *et al.*, 2013; CYStat, 2018). As for processed agricultural products, halloumi cheese is the key (export) product for Cyprus, followed by beverages such as “Zivania” and local wines (Cyprus Profile, 2018).

The agricultural sector in Cyprus faces several structural problems including the small and fragmented farm holdings, the high input costs, the ageing of rural population and the low education level of farmers, the absence of skilled workforce, the land degradation and water scarcity, and various marketing problems, mainly due to the lack of farmers’ organization (Adamides *et al.*, 2013; European Commission, 2015). In this aspect, small-scale farmers are particularly vulnerable to market and price volatility, while exhibiting low bargaining power and appearing unable to take advantage of economies of scale. The aforementioned make farmers the weakest actors of the food supply chain in Cyprus.

Regarding the structure of the food supply chain in Cyprus, it is generally characterized by long distribution channels, involving several actors/agents between the producer/farmer (or their organizations) and the (final) consumer (*viz.* from farm to fork). Particularly, in 2016 in Cyprus there were 1,344 wholesalers of fruits and vegetables, meat and meat products, dairy products, etc., 1,058 processors of food products and 1,258 retailers (Eurostat, 2018). It is noted that some of the above-mentioned actors, mainly wholesalers and/or processors, are also exporters and/or importers of food products, while others, e.g. wholesalers, may act also as retailers; that is having dual or even triple occupational orientation.

The research population of the study included all stakeholders in the food supply (*i.e.* crop and livestock producers, producers’ organiza-

tions, processors, wholesalers and retailers). A representative sample of 200 individuals/enterprises was selected and proportionally stratified based on the occupational category of the sampling unit. For the selection of the sample, the official registers of traders held by various state departments were used as sampling frames. In particular, the following sampling frames were used: the register of processors and exporters of agricultural and livestock products, meat products and processed products, traditional products, etc. published by the Export Promotion Agency of the Ministry of Commerce, Energy, Industry and Tourism, the list of recognized Producer Groups and Organizations and the retailers’ registers maintained by the Department of Agriculture, as well as the Fishermen and Fisheries Registers maintained by the Department of Fisheries. As far as farmers are concerned, the sample was taken over by the Farm Accountancy Data Network (FADN) maintained by the Department of Agriculture. It is noted that in the case of the Producer Groups and Organizations, out of a total of 13 entities that participated in the survey, twelve (12) are officially recognized and included in the relevant register of the Department of Agriculture, while one is in the recognition process.

2.2. Data and methods

Data was collected by means of a structured questionnaire, which was common to all professional categories. The questionnaire was pilot-tested in a small sample of participants to assess the comprehensibility of the questions and make the necessary improvements. Participation in the survey was optional and the information gathered was confidential. To protect anonymity, no personal or corporate information was requested (with the exception of telephone number), and the analysis of the information was done both by professional category and for the overall sample. The information was collected through personal interviews that took place in the five districts (see Section 2.1.) and lasted from June 8 to July 20, 2018. In the case of uncertainties regarding the accuracy of the provided information, a telephone contact for clarifications was held; this, of course,

with the agreement of the participant. Through this process a total of 199 fully completed questionnaires were finally collected. This was followed by the processing and coding of the questionnaires. The data were analyzed using simple descriptive and inferential statistics in SPSS software (version 25). On the one hand, descriptive statistics included means and medians for continuous variables, and frequencies for categorical variables. On the other hand, inferential statistics involved Spearman rho correlation and ANOVA analyses as described below.

Based on authors' experience in the operation of Cyprus market, it can be assumed that very small and small businesses are the ones most affected by the existence of UTPs in the supply chain, mainly because of their lower bargaining power. Therefore, in order to investigate this hypothesis, it was considered appropriate to examine the relationship between the annual turnover and selected variables, using the Spearman rho correlation coefficient in the overall sample. In particular, the relationship between the annual turnover and the number of employees in an enterprise as well as the estimated cost of UTPs as a percentage (%) in the annual turnover were examined. In addition, the correlation between the number of employees and the estimated cost of UTPs was also examined.

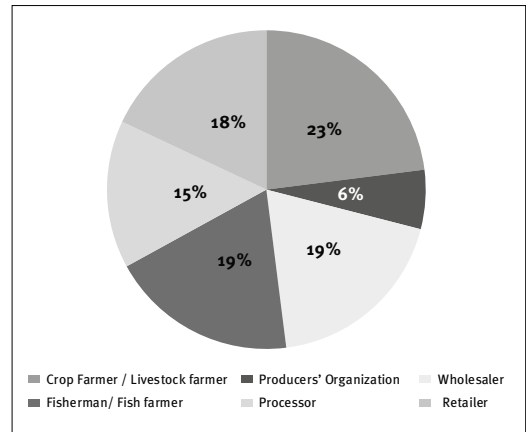
Finally, to examine if there were any significant differences between the occupational categories with regard to the frequency of the occurrence of UTPs in the food supply chain, one-way ANOVA was employed along with Games-Howell post-hoc test ($p < 0.05$). For this purpose and in order to facilitate the application of ANOVA, one additional "category" was created which included those participants that declared dual or even triple occupational orientation.

3. Results

The main findings of the study are presented in the tables and figures below. Figure 1 illustrates the occupational categories to which the respondents belong.

The total number of observations was 223, which resulted from 199 completed questionnaires. The observations exceed the number of

Figure 1 - Percentage (%) of sampled enterprises.



participants because 20 of the respondents stated that they belong to more than one occupational category (viz. dual/triple occupational orientation), as the relevant question of the questionnaire allowed multiple response. For example, some participants who were dealing with wholesale and retail trade, had been identified in both occupational categories.

Table 1 shows selected business characteristics as well as the estimated cost of UTPs as a percentage of the annual turnover in the food sector by occupational category and in the overall sample. As shown, the average number of employees in the overall sample is 10.33. The largest average number of employees is in processors' category (30.45), followed by wholesalers with 13.42 employees, retailers (12.58), fishermen/fish farmers (11.07), producers' organizations (8.69), and crop and livestock farmers (2.94). As a result, the sampled companies are considered to be very small or small and medium-sized enterprises, confirming the Cypriot reality.

The average annual turnover of the overall sample is € 1.88 million. Processors have the largest turnover (€ 5.74 million), followed by producers' organizations (€ 3.50 million), wholesalers (€ 2.71 million), retailers (€ 1.88 million), fishermen/fish farmers (€ 1.35 million) and crop/livestock farmers (€ 54 thousands).

Regarding actors' category in the overall sample, 46.7% are suppliers, 40.2% are both suppliers and buyers, and 13.1% are identified as buyers. Within the retailers' category, 65% are buyers,

Table 1 - Selected characteristics/variables of the stakeholders and estimated UTP cost as a percentage of the annual turnover in the food sector, by occupational category and in the overall sample.

Characteristic/ variable (unit)	Occupational category						
	Crop/ livestock farmer (n=52)	Fisherman/ fish farmer (n=42)	Producers' Organization (n=13)	Processor (n=33)	Wholesaler (n=43)	Retailer (n=40)	Overall sample (n=199)
Number of employees	2.94 (2.00)	11.07 (2.00)	8.69 (5.00)	30.45 (8.00)	13.42 (7.00)	12.58 (7.50)	10.33 (3.00)
Annual turnover (k€)	54.07 (15.35)	1,346.43 (20.00)	3,501.75 (3,000.00)	5,735.64 (600.00)	2,713.10 (800.00)	1,880.92 (500.00)	1,878.40 (85.00)
Exports as a percentage of annual turnover (%)	2.69 (0.00)	4.55 (0.00)	14.50 (0.00)	18.40 (5.00)	2.70 (0.00)	0.25 (0.00)	5.39 (0.00)
Estimated UTP cost as a percentage of annual turnover (%)	31.85 (30.00)	11.58 (10.00)	14.12 (10.00)	10.55 (5.00)	11.58 (10.00)	5.71 (1.75)	16.56 (10.00)
<i>Stakeholder category (%)</i>							
Buyer	0.0	0.0	0.0	0.0	0.0	65.0	13.1
Supplier	90.4	95.2	38.5	9.1	4.7	5.0	46.7
Supplier and buyer	9.6	4.8	61.5	90.9	95.3	30.0	40.2
<i>Food group (%)</i>							
Crop production	69.2	0.0	92.3	48.5	69.8	70.0	57.8
Livestock production	30.8	0.0	7.7	39.4	7.0	10.0	17.1
Fishery/aquaculture products	0.0	100.0	0.0	12.1	23.3	20.0	25.1

Values in the table present the average of the numerical (quantitative) variables, as well as the relative frequency (%) for the categorical variables. In parenthesis next to the average is the median.

n is the size of the sample, which for some variables is less than the indicated size due to missing values.

5% are suppliers and 30% both suppliers and buyers. Producers' organizations declare that 38.5% belong to the suppliers' category, while 61.5% to suppliers and buyers. As expected, 90.4% of crop/livestock farmers are identified as suppliers of agricultural products. Moreover, almost two thirds of the total sample (57.8%) is engaged in the trade of crop products, 17.1% in animal products and 25.1% in fishery/aquaculture products.

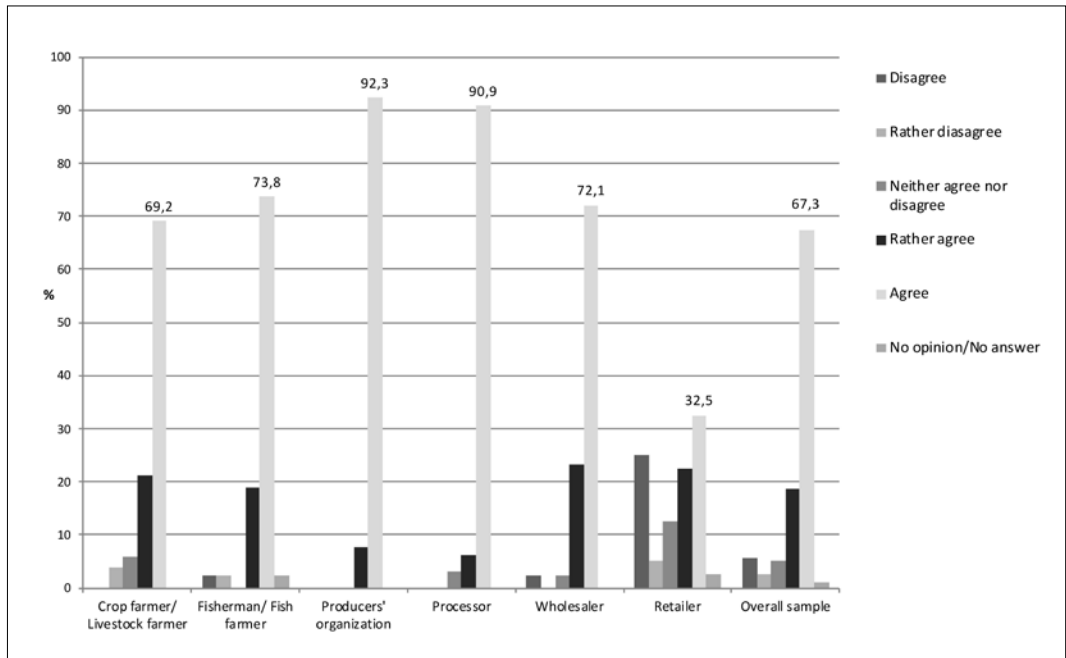
In the overall sample, the estimated cost of UTPs, as a percentage of the annual turnover, is 16.56%. Crop and livestock farmers reported the highest percentage (31.85%), followed by producers' organizations (14.12%), fishermen/fish farmers and wholesalers with 11.58% each, processors with 10.55% and finally retailers

with 5.71%, which is the lowest. These results, although based on self-assessments, confirm that those most affected by the occurrence of UTPs in the food supply chain are crop and livestock farmers, while less affected are the operators downstream the chain, mainly retailers.

According to Figure 2, 67.3% of the total sample agree, 18.6% rather agree and 5.0% neither agree nor disagree, that there are practices in the B2B food supply chain in Cyprus that can be regarded as UTPs. These results are generally similar within occupational categories, with the exception of retailers, where only 32.5% agree with the existence of UTPs in the supply chain.

It should be noted that, 18 of the respondents stated "Disagree (11)" or "Rather disagree (5)"

Figure 2 - Degree of agreement on the occurrence of UTPs in the food supply chain.



or “No opinion/No Answer (2)” in the question of the existence of UTPs in the food chain, so at this stage the interview for them was terminated. Therefore, the analysis of the following questions was based on the 181 participants who stated in the relevant question either “agree” or “rather agree” or “neither agree nor disagree”.

Table 2 shows the frequency of occurrence of the major UTPs by occupational category and in the overall sample, and it is self-explanatory. Responses for the frequency of UTPs are ranked in a scale from 1 to 5, where 1 = never and 5 = very often. In general, all commercial practices appearing in the table with values above 1, regardless of their frequency, were recorded as UTPs that have occurred in the agri-food sector in Cyprus. For practical reasons, and for the sake of simplicity, both in the overall sample and within the occupational categories, UTPs with an average value of greater or equal to 2.50 are considered to be the most frequently occurring UTPs in the food supply chain.

As shown in Table 2, all respondents agree that the payment exceeding a 30 day period for perishable or agri-food products in general, is the UTP that occurs most frequently (average

3.25). Similarly, all occupational categories, specifically crop/livestock farmers (3.98), processors (3.85), wholesalers (4.00), producers' organizations (3.58), retailers (2.50) and “dual/triple orientation” category (4.00), with the sole exception of fishermen/fish farmers (1.03), consider this practice to be the most frequently occurring in their field(s) of activity. However, the only significant statistical difference ($p < 0.05$) was found between fishermen/fish farmers and all other categories (except retailers).

As the second most frequently occurring UTP, all respondents considered the unilateral and retroactive amendments to the contracts (2.83). This trading practice received an average of 3.72 from crop/livestock farmers, 3.06 from fishermen/fish farmers, 2.83 from producers' organizations and 2.50 from wholesalers. Retailers assigned the lower value to this practice (average 1.36), which was significantly different ($p < 0.05$) from the mean values of the remaining categories.

The UTPs with the next most frequent occurrence at the level of crop/livestock farmers, are withholding by one party of essential information to both parties, with an average of 3.43, and

Table 2 - Frequency of the occurrence (average*) of Unfair Trading Practices in the food supply chain by occupational category and in the overall sample.

Unfair Trading Practice	Occupational category							
	Crop/ Livestock farmer (n=47)	Fisherman/ Fish farmer (n=35)	Producers' Organization (n=12)	Processor (n=26)	Wholesaler (n=28)	Retailer (n=14)	Dual/triple orienta- tion** (n=19)	Overall sample (n=181) ***
(a) Unilateral and retroactive changes to contracts (concerning volumes, quality standards, prices)	3.72a	3.06b	2.83ab	2.35b	2.50b	1.36c	2.47b	2.83
(b) Last minute order cancellations concerning perishable products	2.45	1.91	2.50	1.73	2.29	1.71	2.32	2.15
(c) Payment periods longer than 30 days for perishable or agri-food products in general	3.98b	1.03a	3.58b	3.85b	4.00b	2.50ab	4.00b	3.25
(d) Imposing contributions to promotional or marketing costs	1.23b	1.00b	1.00b	2.88a	1.46b	1.29b	2.11ab	1.54
(e) Unilateral termination of a commercial relationship without objectively justified reasons	2.17c	1.14ab	1.92ac	1.58abc	1.93c	1.07b	1.79c	1.71
(f) Requests for upfront payments to secure or retain contracts ("hello money")	2.13b	1.00a	2.17ab	2.00b	1.61b	1.36ab	2.00ab	1.74
(g) Imposing claims for wasted or unsold products	1.36b	1.00a	2.00ab	1.31ab	1.82b	1.50ab	1.79ab	1.45
(h) Imposing private standards relating to food safety, hygiene, food labelling and/or marketing standards, including strict verification procedures	1.51a	1.00b	2.42ab	1.81ab	1.68ab	1.00b	1.89ab	1.54

Unfair Trading Practice	Occupational category							
	Crop/ Livestock farmer (n=47)	Fisherman/ Fish farmer (n=35)	Producers' Organization (n=12)	Processor (n=26)	Wholesaler (n=28)	Retailer (n=14)	Dual/triple orienta- tion** (n=19)	Overall sample (n=181) ***
(i) Programmed overproduction leading to food waste	1.74b	1.54b	1.50ab	1.19ab	1.46ab	1.00a	2.00b	1.54
(j) Withholding by one party of essential information to both parties	3.43b	1.14a	1.67a	1.42a	1.43a	1.07a	1.32a	1.87
(k) Passing onto other parties of confidential information received from partner	2.17a	1.11b	1.75ab	1.15b	1.32b	1.00b	1.37ab	1.49
(l) Additional payment to have products displayed favorably on shelves ("shelf-space pricing")	1.02a	1.00a	1.00a	2.96b	1.11a	1.50a	1.53a	1.40
(m) Imposing on a contract party the purchase of an unrelated product ("tying")	2.17b	1.00a	2.67ab	1.62ab	2.54b	1.43ab	1.79ab	1.86
(n) Inconsistent application of marketing standards leading to food waste	1.19	1.00	1.25	1.19	1.82	1.29	1.26	1.27
(o) Imposing to suppliers' costs related to product wastage or theft	1.17	1.00	2.75	1.08	1.61	1.07	1.16	1.29
(p) Imposing a minimum remaining shelf life of goods at the time of purchase	1.09	1.00	1.42	1.23	1.00	1.00	1.11	1.09

Values ≥ 2.50 are presented in bold.

Different lowercase letters within rows indicate statistically significant differences between means according to Games-Howell test ($p < 0.05$).

* Values: 1 = never, 2 = rarely, 3 = occasionally, 4 = often, 5 = very often.

** Some respondents belonged to more than one occupational category (e.g. wholesaler and retailer).

*** 18 of the respondents stated "Disagree" or "Rather disagree" or "No opinion/No answer" in the question regarding the occurrence of UTPs in the food supply chain. At this stage, the interview was terminated.

last-minute cancellations concerning perishable products with an average of 2.45. For producers' organizations, the next most frequent UTPs are the imposition to suppliers of costs related to product wastage or theft (2.75), the imposition on a contractual party the purchase of an unrelated product ("tying"), with a value of 2.67, and the last minute order cancellations concerning perishable products (2.50). For processors, the additional payment to have products displayed favorably on shelves ("shelf-space pricing") with a value of 2.96 and the imposition of contributions to promotional marketing costs (2.88) are also considered important UTPs.

As illustrated in Figure 3, the overall sample considers that the unilateral and retroactive amendments to the volume, quality standards, prices etc., payment deadlines for perishable or other agricultural food products over 30 days and last-minute cancellations, are the three UTPs with the most serious impacts on the food supply chain. Similarly, retailers and wholesalers consider the aforementioned UTPs as the most serious ones. In addition, crop and livestock farmers, producers' organizations and processors, believe that unilateral and retroactive contractual amendments and payment deadlines for perishable or other agricultural food products of more than 30 days are those with the most severe impacts on the food chain. On the other hand, fishermen/fish farmers consider unilateral and retroactive contractual amendments and last-minute order cancellations as the UTPs with the most severe impacts on the food supply chain.

Figure 4 shows the percentage of enterprises in the food supply chain which have been victims to a UTP recorded in the questionnaire over the last five years, by occupational category and in the overall sample. The vast majority (91.7%) of the overall sample stated that they have been victims of UTPs over the last five years. It is noteworthy to mention that the total number of fishermen/fish farmers (100%) stated that they had suffered a UTP. Similarly, 97.6% of wholesalers, 93.9% of processors, 92.3% of producers' organizations, 92% of crop/livestock farmers and 74.1% of retailers, agreed with the previous statement.

Table 3 presents the percentage of enterprises that have been subject to UTPs by another ac-

tor in a business transaction. About 56% of the overall sample has been subject to a UTP by a retailer. Similarly, within occupational categories, 84.6% of fishermen/fish farmers, 78% of wholesalers and 71% of processors declared that they have been subject to a UTP by retailers. In addition, 50% of the overall sample has been subject to a UTP by wholesalers, while 69.6% of crop/livestock farmers and 58.3% of producers' organizations have suffered from UTP by wholesalers. It is worth mentioning that 45% of retailers, 50% of producers' organizations, 41.9% of processors and 31.7% of wholesalers stated that they have been a victim of UTP by individual farmers.

Of the total sample, 31 operators are active in the export of agricultural products. In a relevant question, 74.2% of these companies declared that their transactions with foreign operators did not negatively affect their ability to deal with UTPs, while 22.6% stated the opposite.

Table 4 shows the percentage of the food chain stakeholders that, according to participants' opinion, should be included in the national legislation on UTPs. The majority (67.4%) of the overall sample agrees that all food supply chain businesses should be included in the national legislation on UTPs. This view is shared by all occupational categories, with fishermen accounting for the smallest percentage (41%). It is worth noting that 38% of crop/livestock farmers and 61.5% of fishermen/fish farmers, are in favor of the inclusion of their own occupational category in the national legislation.

Finally, respondents were asked which kind of action should be taken to resolve UTPs in the food supply chain. As shown in Table 5, the vast majority of the total sample (91.2%) considers that UTPs in the agri-food chain can be limited by legislation, while the corresponding responses of all the individual categories are consistent. A very high percentage (89.7%) of the occupational category of fishermen/fish farmers, suggests as a solution of limiting UTPs to strengthen the role of farmers in marketing through producers' organizations, short food supply chains and interbranch organizations. The same view was expressed by 32.6% of the total sample, 30% of crop/livestock farmers and 22.2% of retailers.

Figure 3 - UTPs which are estimated to have the most serious impact by occupational category and in the overall sample.

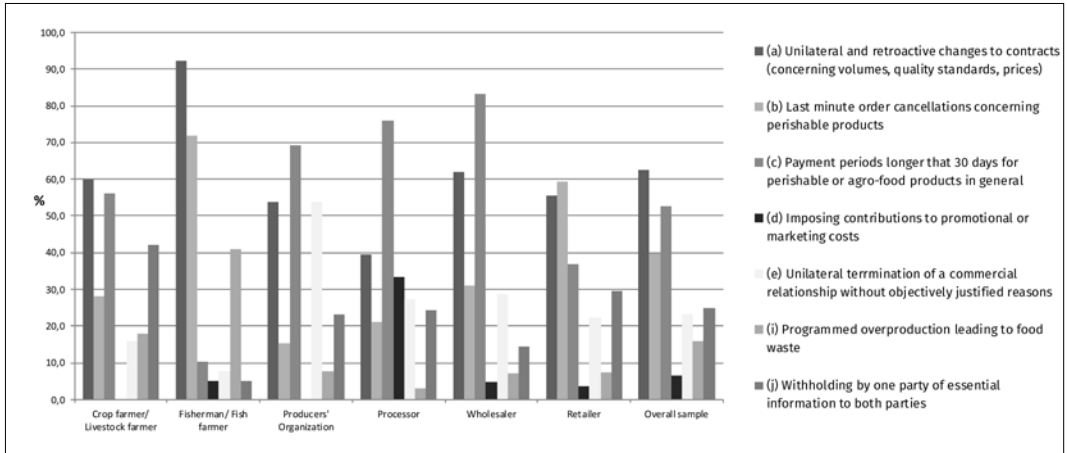
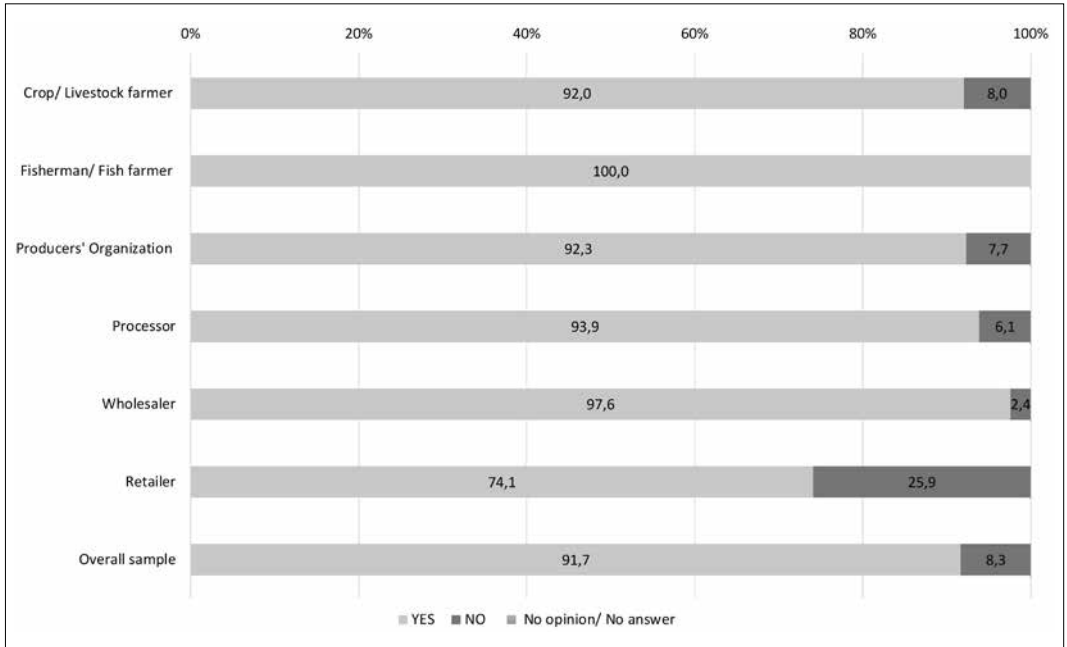


Figure 4 - Percentage (%) of enterprises which have been victims of a UTP, over the last 5 years.



The Spearman rho correlation analysis showed that there is a positive and statistically significant correlation between the annual turnover of the company and the number of employees ($r_s = 0.79, p < 0.01$), indicating that enterprises with a higher number of employees tend to have higher annual turnover. On the other hand, the estimated cost of UTPs as a percentage (%) of the annual

turnover is negatively and statistically correlated with the annual turnover ($r_s = -0.34, p < 0.01$), as well as with the number of employees ($r_s = -0.26, p < 0.01$). These relationships indicate that enterprises with higher annual turnover (or larger number of employees) tend to have lower costs from UTPs, or vice versa, that companies with lower annual turnover (or fewer employees)

Table 3 - Percentage (%) of enterprises, which have been subject to UTPs in a business transaction by crop farmer, livestock farmer, fisherman, fish farmer, producers' organization or other enterprise.

Enterprise from which participants have been subject to an UTP	Occupational category						
	Crop/Livestock farmer (n=46)*	Fisherman/fish farmer (n=39)*	Producers' organization (n=12)*	Processor (n=31)*	Wholesaler (n=41)*	Retailer (n=20)*	Overall sample (n=166)*
Crop farmer/ Livestock farmer	8.7	0.0	50.0	41.9	31.7	45.0	24.7
Fisherman/fish farmer	0.0	2.6	0.0	0.0	2.4	5.0	1.2
Producers' organization	15.2	0.0	0.0	0.0	0.0	0.0	4.2
Processor	17.4	0.0	0.0	3.2	2.4	5.0	5.4
Wholesaler	69.6	79.5	58.3	38.7	9.8	15.0	50.0
Retailer	26.1	84.6	16.7	71.0	78.0	40.0	56.0
Enterprise established abroad	4.3	2.6	8.3	12.9	7.3	0.0	4.8
Other	0.0	12.8	0.0	12.9	17.1	25.0	6.0

Highest percentages within each occupational category appear in bold.

** Only respondents that have been victims of UTPs appear in the table.*

Table 4 - Percentage (%) of the food chain stakeholders, estimated that they should be included in the national legislation on UTPs by occupational category and in the overall sample.

Food chain stakeholders	Occupational category						
	Crop/Livestock farmer (n=50)	Fisherman/Fish farmer (n=39)	Producers' Organization (n=13)	Processor (n=33)	Wholesaler (n=42)	Retailer (n=27)	Overall sample (n=181)*
The full supply chain	54.0	41.0	84.6	90.9	78.6	74.1	67.4
Crop farmers/ Livestock farmers and Producers' Organizations	38.0	0.0	0.0	3.0	0.0	3.7	11.6
Fishermen/Fish farmers	0.0	61.5	0.0	3.0	7.1	11.1	14.9
Processors	12.0	5.1	7.7	9.1	7.1	7.4	7.2
Consumer Organizations	6.0	0.0	0.0	0.0	2.4	0.0	2.2
Retailers	32.0	38.5	7.7	12.1	11.9	14.8	21.0
Wholesalers	42.0	41.0	7.7	12.1	16.7	22.2	25.4
Other	0.0	10.3	0.0	12.1	14.3	14.8	5.5

** Some respondents belonged to more than one occupational category (e.g. wholesaler and retailer), while 18 of the respondents stated "Disagree" or "Rather disagree" or "No opinion/No answer" in the question regarding the occurrence of UTPs in the food supply chain. At this stage, the interview was terminated.*

tend to have higher costs from UTPs. Therefore, it can be concluded that small businesses, i.e. those with fewer employees or less annual turnover, are more affected by the existence of UTPs, confirming the original hypothesis.

4. Discussion

According to the study analysis, two-thirds of the overall sample agrees that the Cyprus B2B food supply chain is affected by UTPs with a different frequency of occurrence. Payment periods over 30 days for perishable or other agri-food products, unilateral and retroactive amendments to contracts regarding volume, quality standards, prices, etc., last-minute order cancellations, and other practices, are serious problems faced by the Cypriot B2B agri-food sector.

With regard to the UTPs which are believed to have the most serious (economic) impact on food supply chain actors, are unilateral and retroactive

changes to contracts in terms of volume, quality standards, prices etc., payment periods for perishable or other agri-food products longer than 30 days, and the unilateral termination of a commercial relationship without any objectively justified reasons.

The study has not identified any UTPs which were not included in the questionnaire. Therefore, the national legislation should take into consideration the most frequent UTPs, some of which are included in the Proposal for a Directive of the European Parliament and of the Council on UTPs in business relations in the food supply chain.

Almost all actors in the food supply chain of Cyprus reported that they have been subject to UTPs by another actor. The most important are the UTPs imposed by retailers on other operators. Equally important is the finding that significant percentages of most occupational categories declare that they have suffered UTPs from

Table 5 - Percentage (%) of the appropriate means by which the UTPs in the food supply chain are estimated to be restricted, by occupational category and in the overall sample.

Appropriate means by which UTPs can be restricted in the food supply chain	Occupational category						
	Crop/Livestock farmers (n=50)	Fisherman/Fish farmers (n=39)	Producers' Organization (n=13)	Processor (n=33)	Wholesaler (n=42)	Retailer (n=27)	Overall sample (n=181)*
The introduction of legislation on UTPs	86,0	84,6	100,0	100,00	95,2	96,3	91,2
Expanding contract farming	16,0	0,0	0,0	0,0	7,1	3,7	6,1
Undertaking of trade risks by insurance companies	4,0	0,0	7,7	3,0	2,4	0,0	2,8
Strengthening the role of farmers in trading-marketing (Producers' Organizations, Short supply chain, Interbranch organizations)	30,0	89,7	7,7	9,1	14,3	22,2	32,6
Other	10,0	0,0	7,7	9,1	9,5	7,4	7,2

*Some respondents belonged to more than one occupational category (e.g. wholesaler and retailer), while 18 of the respondents stated "disagree" or "rather disagree" or "No opinion/No answer" in the question regarding the occurrence of UTPs in the food supply chain. At this stage, the interview was terminated.

individual crop/livestock farmers. This finding dismisses the perception that UTPs are primarily imposed by the strongest market players. Of course, an UTP originating from an individual farmer may not have the same (economic) impact as an UTP imposed by other operators with higher bargaining power. However, it still creates problems in the smooth function of the market, while increasing the uncertainty for the actor affected by the specific UTP.

The cost of UTPs is estimated by all stakeholders as an important percentage of their annual turnover, ranging from 5.7% for retailers to 31.9% for farmers; thus contributing to income loss for enterprises which have been subject to UTPs.

Most actors agree with the inclusion of the entire supply chain in the national legislation on the UTPs, while crop/livestock farmers and fishermen/fish farmers indicate the need to include in the national legislation their own professional categories. Taking into consideration that a significant percentage of producers' organizations have been subject to UTPs by individual crop/livestock farmers, it is perceived that the latter need to be included in the legislation, regardless of whether they are (or not) members of producers' organization.

The vast majority of the overall sample agrees that the introduction of national legislation on UTPs is the most appropriate means in order to restrict B2B UTPs in the agri-food chain. At the same time, the role of producers' organizations, short food supply chains and interbranch organizations, are recognized as appropriate means in strengthening the negotiating power of farmers, as well as in addressing UTPs (Rosario and Robin, 2018). Indeed, with regard to producers' organizations, their important role in the sustainability of (small-scale) farmers is well-acknowledged in the literature (Fallah-Alipour *et al.*, 2018).

Based on the correlation analysis between selected variables, it is concluded that small enterprises, i.e. those with fewer employees or lower annual turnover, are more likely to be affected by UTPs. It would therefore be appropriate for these enterprises to enjoy greater protection in the national legislation on UTPs. This result confirms the view that UTPs in the agri-food chain, often involve big retailers and

companies bullying their smaller counterparts (Popović *et al.*, 2018).

The study confirms both the results of the inception impact assessment and the open public consultation findings of the Commission Staff Working Document "Stakeholder Consultation – Synopsis report", accompanying the document "Proposal for a Directive of European Parliament and the Council on unfair trading practices in business-to-business relationships in the food supply chain" (European Commission, 2018; Rosario and Robin, 2018). Specifically, 91% of respondents in the inception impact assessment, 90% of respondents in the open public consultation and 91% in the present study agreed, or partially agreed, that there are practices in the food supply chain that could be considered as UTPs. According to the open public consultation, unilateral and retroactive changes to contracts (concerning volumes, quality standards, prices, etc), last minute order cancellations concerning perishable products and payment periods longer than 30 days for agri-food products in general, are the three practices considered to be the most frequent UTPs. Although appearing in different order, our study confirms the importance of those three UTPs. In addition, 71% of respondents in the inception impact assessment believed that there is a need for the EU to act, compared to 91.2% who expressed the same view in the current study.

5. Conclusion

This study is regarded as a first attempt at the MS level for the identification of B2B UTPs in the food supply chain. By means of a primary survey, it corroborates the existence of B2B UTPs within the Cyprus food supply chain. The estimated associated costs of UTPs have an important impact on the annual turnover of all stakeholders. Therefore, we argue that the national legislation should adopt the recommendations of the Proposal for a Directive of the European Parliament and of the Council on UTPs in business relations in the food supply chain and incorporate the most frequent UTPs identified in this study.

UTPs are imposed not only by strong players in the food supply chain, but also by individual crop/livestock farmers. As a result, all players in

the supply chain should be included in the national legislation.

A straightforward policy recommendation resulting from this study, is that policy and decision makers should seek to reinforce the role and the bargaining power of small businesses in the food supply chain. This might be accomplished through the development of efficient producers' organizations, short food supply chains, interbranch organizations and strategic partnerships.

Taking into account the diversity of the food supply chain, the national legislation on B2B UTPs should contribute to maintaining a competitive agri-food sector, tackling price and quantity volatility, and limiting the socio-economic impacts primarily on small-scale farmers/businesses. Moreover, we believe that the national legislation on UTPs should be a mix of policies that combine private, administrative and judicial methods of monitoring and enforcement. This mixed approach should allow voluntary systems and standards to operate and be complemented by reliable and effective law enforcement and control institutions.

Despite its contribution to the relatively limited literature on UTPs in the agri-food sector, this study has some important limitations. First, the overall assessment of UTPs is generally based on actors' self-assessment, which implies a significant degree of subjectivity, especially when estimating the cost of UTPs. However, such an approach is a pragmatic way of assessing complex phenomena, such as UTPs, as pointed out by Zahm *et al.* (2008). As regards the cost of UTPs, the self-assessment approach was applied as it was not feasible to have access to the financial records of the various actors/enterprises, as they appeared reluctant to provide such sensitive information. Second, because of time and financial resource constraints, the sample of the study had to be limited to approximately 200 participants. Nonetheless, we were able via a representative stratified sample to manage the heterogeneity existing in the food supply chain. In this respect, further research is needed in order to assess UTPs in Cyprus (or elsewhere) using larger samples and more objective methodological processes.

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