On Sustainability of a Dairy Sector in Crisis

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ABSTRACT

The European milk crisis accentuated the importance of sustainability in the dairy sector. In achieving sustainable rural development, strategies focused on value chain creation, transparency and traceability are crucial. Sustainable relationships are needed to promote these aspects through collective action. This paper uses empirical evidence from Greece to contribute to the exploration of the sustainability concept within the agricultural sector and specifically the dairy sector.

Based on empirical data, we analyse the overall sustainability of the dairy sector based on the *innovation capacity* of the sector and the *sustainability of the relationship* of the key actors, such as dairy farmers and processors. Additionally, a theoretical approach addressing '*relationship sustainability*' and the factors affecting this construct is proposed. The preliminary findings underline a deficit in innovation capability and an inadequate sustainability level of the relationships within the dairy sector. Policy implications are offered.

Keywords: relationship sustainability; resilience; innovation capacity; collective; dairy value chain; transparency; traceability

1 Introduction

The European dairy sector has to overcome the recurring milk crisis while, at the same time, sufficiently prepare for the possibility of a next one. After the abolition of the milk quota system, the EU-wide sector faces extreme price volatility and might have to do so more often in the new deregulated era.

The European dairy sector recorded a significant deterioration in average weighted farm gate milk prices from the exceptionally high levels of 40.2 cents per kilogram in December 2013 to 25.6 cents per kilogram in July 2016. From March 2014 to March 2016, the average weighted price for raw cow's milk across the EU fell by 27.24 % and average farm gate milk prices at 25.6 c/kg imply a 25% decrease compared to a 5-year average, as reported in the EU - Milk Market Observatory (EU-MMO, 2017).

The difficulties experienced by the dairy sector are essentially related to a strong global supply-demand imbalance. Global demand for milk and milk products has generally deteriorated throughout 2014 and in the first months of 2015, notably as a result of the loss of the Russian market, the first destination for EU dairy exports, and the slowdown in exports to China, the main world importer of milk products (EU-MMO, 2017).

The magnitude and duration of the recovery in EU dairy product price, which happened in autumn 2016, remain uncertain, as well as the extent of the milk price recovery. In this crisis environment, beyond short term exceptional support measures, long term sustainability is being sought.

However, sustainability objectives are deteriorating in all spheres of development, as witnessed by multiple environmental, social and economic crises (FAO, 2016). In general, sustainability describes the situation in which the needs of the present generation are met, without jeopardising the needs and resources of the future ones. In the agri-food sector sustainability is linked with the functioning of the global market and its main features that include such complex issues as concentration of market power, shortage in resources, recombination of foods with ingredients from all over the world, greater transportation distances, high increase in risk for safety and quality issues, fragmentation of supply chains, high price volatility, environmental stress, and socio-economic instabilities.

The most investigated aspects regarding sustainable supply chains are the link between the adoption of green practices and the achievement of economic performance leaving the human dynamics of progressing towards sustainable inter-organizational networks less investigated (Touboulic and Walker, 2016). What exactly constitutes sustainability, beyond the broad view that typically sees sustainability crucially balancing three dimensions: economic, social, and environmental sustainability is much less clear (Forssell and Lankoski, 2014).

This paper focuses on the sustainability of the dairy sector. More specifically, we use preliminary empirical data from Greece to analyse the situation of the dairy sector given the Milk Crisis experienced across Europe to conceptualize in an abductive manner and to highlight facets of sustainability.

Our study contributes to the strand of literature that interconnects sustainability of the agri-food sector with strategies for rural and local development. The later aims toward resilient agri-food systems. The fact that the 'sustainable' development has also been referred to as 'durable' development, indicates that, the two concepts of 'sustainability' and 'resilience' can be seen as complementary (Knickel et al, 2017). Others argue that resilience is defined in a more dynamic way, in terms of the ability to cope with shocks and stresses; however there tends to be confusion between these two concepts (Lamine, 2015). Resilience has also become increasingly important as a reference point in policy discussions. However, one can argue that, despite its trending usage, there is little clarity about its meaning. Within this framework, we approach the sustainability concept in this paper as including the resilience notion.

Strategies for sustainable rural development focus on value chain creation through the establishment and constant quest for transparency, using tools, such as traceability systems, in order to establish trust and ultimately consumer willingness to pay for products of a higher added value. Despite various attempts to define what sustainability actually means, the concept is still imprecise in its definition (Luhmann et al., 2016). The abstract, multidimensional nature of the concept makes defining and achieving sustainability and resilience objectives a difficult task. To enable the actors within an agri-food system to cope with crises and volatility, a shift from the traditional approach for developing more sophisticated 'forecasting' to developing more comprehensive 'understanding' of agri-food systems is required on co –evolvement of all actors within the agri-food system to achieve sustainable development. The focus on identifying the "right" path to establish a sustainable agri-food sector or the "optimal" way to ensure sustainability is erroneous (Darnhofer et al., 2010). Against this backdrop it is the objective of this paper to explore the concept of sustainability in the agri-food sector, and specifically the dairy sector.

Following this introduction, the overall structure of this paper comprises (1) a literature review of sustainability strategies for agri-food sectors based on concepts like 'value chain creation', 'transparency', 'traceability' and relational conditions for sustainability, (2) presentation of the outlook and prospects of the dairy sector in Greece, (3) the methodology for an evaluation of the sustainability of the sector, (4) sampling and data collection, (5) results regarding the evaluation of (a) innovation capacity, with two subsections referring to the technology adoption and the dynamic capabilities, and (b) relationship sustainability, (6) discussion and finally (7) policy implications and conclusions.

2　Literature Review

Following abductive reasoning (Bawden, 1991) our strategy with the literature review was to start with the relevant scholarly literature studying the sustainability concept around the triptych of value chain creation, transparency and traceability and continue with references to literature that cover different relational aspects of sustainability in the agri-food sector.

As sustainability is an indeterminate concept, approaches to sustainability in the agri-food sector are prone to be constructed according to whichever interests are at play. Thus, measuring of predetermined conditions is problematic. Forssell and Lankoski (2014) call therefore for a more processual, inclusive, and democratic approach to defining and addressing sustainability, combining expert and lay understanding, that we concur.

2.1　Value Chain Creation

The linkage of value-based supply chain management to a more comprehensive sustainability agenda including social, environmental, and long-term economic sustainability can be found in Pullman and Dillard (2010). They provide insights into sustainable supply chain management models through a case study of a value-based organisation. By paying attention to how structures and production processes shape and are shaped by core sustainability values, they propose a new theoretical approach for describing how product attributes are maintained throughout the supply chain.

Value chain creation in traditional or alternative food networks (AFNs) or systems is often linked to a more or less explicit application of the three classical pillars of sustainability, as well as indirect impacts, and therefore Forssell and Lankoski (2014) argue that AFNs may contribute to sustainability in many ways: less physical distance having a positive environmental impact; fewer intermediaries between producers and consumers leading to added value and better economic conditions for farmers; and less social distance between producers and consumers resulting in closer social links and more social sustainability (Lamine, C., 2015). However, agri-food systems do not include solely producers and consumers but, many more important actors, all of which interact and are connected through interdependent relations, and it is essential to consider these relationships as well, as we attempt later in this paper.

Value chain creation in the agri-food chain could take place through innovations if certain barriers would be overcome. Gellynck and Kühne (2010) consider that the underestimation of networking, the lack of of trust, knowledge of appropriate methods and skills as well as the financial and physical resources are the main constraints to for the innovation of traditional food networks

2.2　Transparency

Creating added value by improved sustainability implies creating transparency, since consumers have to be convinced (and thus shown) that the often higher prices involved are justified by the measures to improve sustainability (Wognum et al., 2011). Molnár et al. (2011) identified sustainability as one of the four transparency domains (food safety, quality, origin and sustainability), which represent a hierarchy of transparency domains. They identified information quality as the basis of transparency. Additionally, they show that the success of a transparency project can be measured with direct or indirect performance indicators as was mentioned by the same authors

The challenge of reaching transparency in the food sector is discussed by Fritz et al. (2010) who propose the term 'T-readiness' to express the three basic complexities that enterprises within a food network have to deal with, in order to be ready to serve transparency needs. These complexities involve (1) the identification of information interests of consumers, policy or other stakeholders, (2) the clarification of the information necessary for serving the interests, and (3) the need of enterprises for technological, organizational, and intellectual capability as well as the legal and contractual right to collect, process, provide, and communicate the requested information.

Transparency in the food supply chain is essential to guarantee food quality and provenance to all users of food and food products (Trienekens et al., 2012). Intensified information exchange and integrated information systems involving all chain actors are needed to achieve transparency with respect to a multitude of food properties.

Deimel et al. (2008) introduce a model that provides a theoretical basis for the empirical analysis of transparency, which also applies to the dairy sector. They demonstrated a model that integrates various perspectives on transparency and considers different measurement concepts. The model is based on the formation of the latent construct 'transparency' and therefore, integrates the main determinants of transparency, the effects of transparency on value chain performance and the perception of transparency by supply chain partners.

For achieving sustainability in an agri-food sector Lehmann et al. (2012) study the relevance of global networks, the internet, networked devices, sensors, and communication intelligence. They note that guidance is required as individual investments by enterprises would not provide solutions for chain communication and transparency. Solutions require a coordinated initiative by all members of a chain with trading relationships. Motivation is required based on a fair distribution of investment needs and expected benefits.

2.3   Traceability

Aiming at identifying the effects of technological innovations on firm sustainable performance, the study of Epelbaum and Martinez (2014) validates the idea linking the implementation of technological innovations to a firm's sustainable performance. As firms incorporate food traceability systems, they become a source of sustainable competitive advantage impacting firm efficiency and effectiveness performance.

Traceability can create sustainability by identifying relationships among economic, social and environmental dimensions, including other perspectives that should be considered, such as risk management, transparency, strategy and organizational culture (Kraisintu and Zhang, 2011). Kraisintu and Zhang (2011) considered it was necessary to conduct research on the strategy of implementing traceability for sustainable supply chain management, since traceability was rarely raised as a strategic issue to create value for each dimension of sustainability. In a similar approach, Pappa et al. (2018) investigate the determinants of electronic traceability systems (ETsystem) adoption by the dairy sector and find that the most important factor influencing the 'Intention' of installing and operating an ETsystem in the dairy chain is 'Perceived Control' over the installation and operation of such a system. When dairy farmers and processors perceive the costs, the resources, or the overall effort required as being under their control, they are more inclined to invest in an ETsystem. This effect is stronger for dairy farmers than for dairy processors. They suggest that a sustainable dairy farmer's-processor's relationship is a prerequisite for the effective exploitation of electronic traceability systems, that could contribute to transparency and guaranteeing added value created within the chain.

Engelseth and Sandvik (2017) argue that, most challenging, than understanding technical solutions, is the organizing of food product traceability in an integrated supply chain – including the development of a supportive culture that is open to the necessary collaboration.

2.4   Relational conditions for sustainability

The relational factors that influence the sustainability of certain agri-food supply chains, studied by Reynolds et al. (2009), are (1) effective communication, (2) the existence of personal bonds, and (3) equal power distribution between buyers and suppliers.

Simatupang et al. (2002) studied sustainability in the context of collective action as a form of supply chain integration. They identified four different modes of coordination: logistics synchronisation, information sharing, incentive alignment, and collective learning.

The relatively few successful cases of collective action that appear to exist in Greece among agri-food SMEs could be viewed as an indicator of the sustainability of the agri-food sector (Lamprinopoulou et al., 2006). In another study about the existing forms of collective action in the Greek agri-food sector with a focus on co-operatives, Vakoufaris et al. (2007) find that very successful co-operatives co-exist with unsuccessful ones. The latter are characterised by inflexibilities and inability to respond to a constantly changing market.

Paus et al. (2010) propose an approach to the collective organization of a geographical indication system, which promotes sustainability through value chain creation. They suggest that such a system should make

crucial strategic decisions about the geographical limits and the composition of the relevant group, the partners' common objectives and agenda, the key technical elements of the GI process, and the decision making rules.

Certain researchers focus on the quality standards, either public or private, which contribute to the sustainability of the agri-food sector (e.g., Moruzzo, 2010; Henson and Reardon, 2005). Country of origin labelling or geographical indications standards are considered as means to promoting sustainable development in a sector or a region (Sylvander, 2004; Champredonde and Centeno, 2010; Bouamra-Mechemache and Chaaban, 2010; Roep and Wiskerke, 2010). Luhman et al. (2016) describe as one key success factor for the implementation of a sustainability standard farmers' willingness to participate in such a standard. They further argued that very little is currently known about farmers' attitudes and motivation on this subject. They focus on the dairy sector and argued that large-scale future-oriented dairy farmers, who are considered as 'first movers' or rather 'early adopters', are an attractive target group for such a standard. In contrast to the findings of previous studies, their results show that, in general, future-oriented farmers are willing to implement a comprehensive sustainability standard on their farm, although they cannot be seen as a homogenous group.

Supply chain collaboration influences the three dimensions of sustainability related performance. Rota et al. (2011) propose a theoretical framework that describes the role of supply chain collaboration and sustainable relationships as the organizational pillar of sustainability assessment of a food supply chain. They refer to contributions in the literature that identify a set of variables defining the sustainable relationships able to play an influential role in companies' decision to collaborate, such as trust, commitment and satisfaction.

After reviewing the abovementioned scholarly contributions, we conclude and agree with Touboulic and Walker (2016) that the human dynamics, or otherwise the social and behavioural micro-dynamics, of the change for sustainability in an agri-food sector is comparatively under-investigated. The current paper partially fills this research gap.

3   The outlook and prospects of the dairy sector in Greece

The dairy sector in Greece is struggling, not only due to the EU wide Milk Crisis but, also, due to the preceding and ongoing financial crisis of the country and underlying, sector-specific problems, for which viable solutions are long overdue. The current paper focuses on seeking these solutions and thus reviews only some of the abovementioned problems when necessary.

Greece has a long tradition of high quality dairy products, some well-known worldwide, like Feta Cheese, a white cheese in brine, made from sheep and goat milk of Protected Designation of Origin (PDO) in the EU. The magnitude of the dairy sector was affected in both the number of producers and the quantities of milk produced. Both factors were declined during the last decade and the current financial crisis has worsened the conditions even further. Exports are considered a promising outlet but, to compete on the international market against similar products of lower cost, enhancement of the marketing strategy towards promoting the differentiating attributes of these products is considered vital.

The information on the Greek Dairy Sector presented in this paper is drawn from secondary data obtained from the Hellenic Ministry of Rural Development and Food and unpublished raw data from the Hellenic Agricultural Organization that are available upon request (Milk Sector Statistics). In Table 1, we summarise our own analysis about the prospects of the sector (strengths and opportunities) and the main constraints that the sector has to overcome in order to observe positive upward trends and effective exploration and exploitation of its prospects.

The small-scale structure of the sector, its high production costs, the age composition with mostly elderly farmers, the increased imports of lower cost dairy products, are only some of these weaknesses and threats.

Milk production is of great importance in Greece and accounts approximately for 10% of the total agricultural goods output, rather steadily during the years 2006-2016. In Figure 1 we illustrate the evolution of milk production value in million euros in relation to the total agricultural goods output from 2006 to 2016.

Table 1.

Prospects and constraints, respectively, for the Greek dairy sector

| Prospects	Constraints
- Strong tradition in milk production and processing, specially sheep and goat milk - High number of dairy animals - Production of high quality dairy products - Production of products well known worldwide, like Feta cheese or Greek yogurt - High per capita consumption for dairy products (mainly cheese) - Young people moving from urban to rural areas seeking employment - Strong and competitive dairy industry	- Structure of the sector with mainly small farms - Lack of liquidity and access to funding - High age level of milk farmers - High production cost - High reliance on purchased animal feed - Low level of cooperate spirit - Lack of collective structures and inter-professional bodies - High imports of lower cost dairy products - Lack of proper stockbreeder training and education - Low social recognition of stockbreeder's profession to revitalize it - Global competition and imitation of characteristic Greek dairy products

(Data source: Own evaluation)
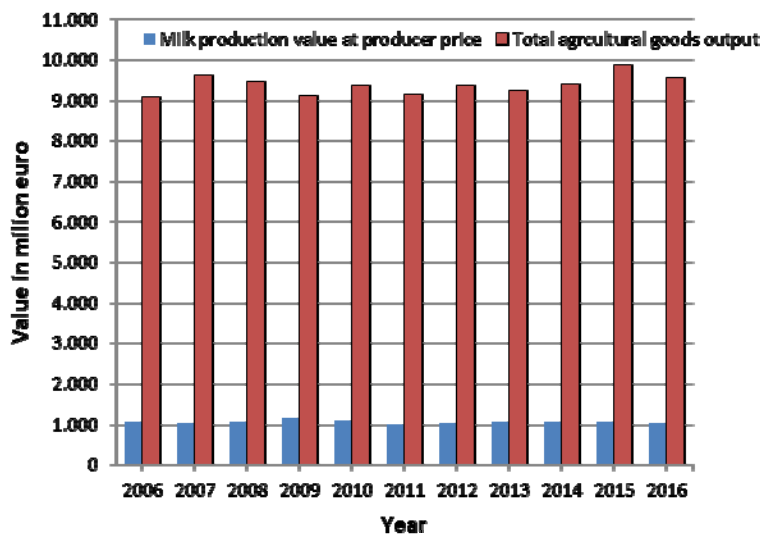
Figure 1. Evolution of milk production value in relation to the total agricultural goods output, 2007-2016
(Data source: EUROSTAT)

The Greek dairy sector has undergone a major shrinkage during the last decade regarding the number of milk farmers active in the sector. This is particularly obvious in the, approximately, 50% decrease in the number of cow milk farmers who dropped from 6,397 in 2006 to 3,045 in 2016. As shown in Figure 2, sheep and goat milk farmers were 57,009 in 2006 and counted 48,639 in 2016, which represents, approximately, a 15% drop. The respective quantities of milk deliveries recorded a fluctuation for the same period that resulted in a net decrease in cow milk; from 740,908 tn in 2006 to 601,466 in 2016. Production of sheep and goat milk increased during the same period and surpassed cow milk production, as traditionally was the case prior to the milk quota era (Figure 3). The evolution of raw cow's milk prices for the same period is presented in Figure 4. The number of processors is continuously decreasing since 2006, when 825 processing firms were active, to 711 processors in 2016.
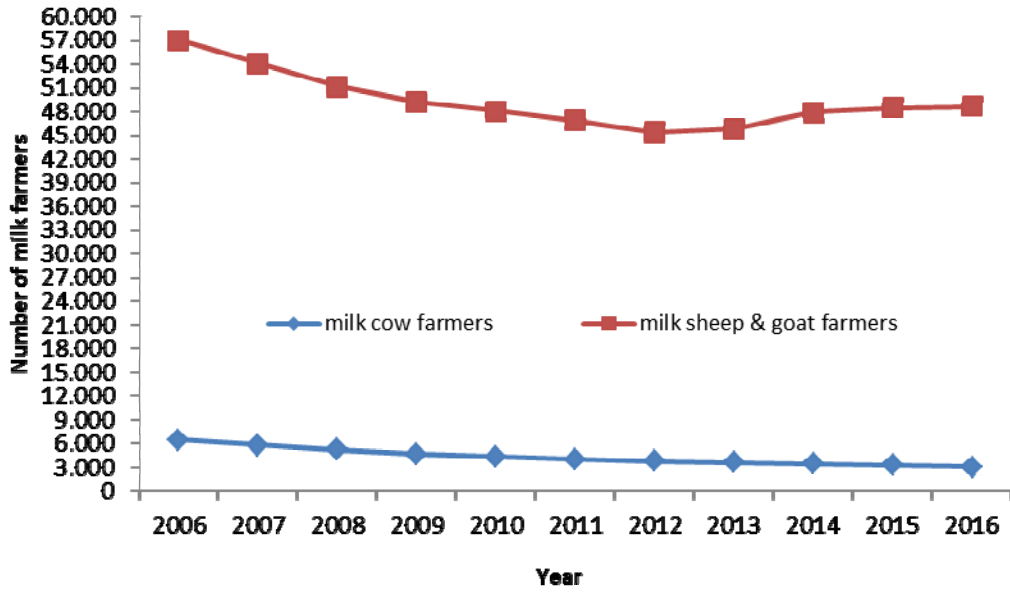
Figure 2. Evolution of the number of milk farmers delivering milk, 2006-2016
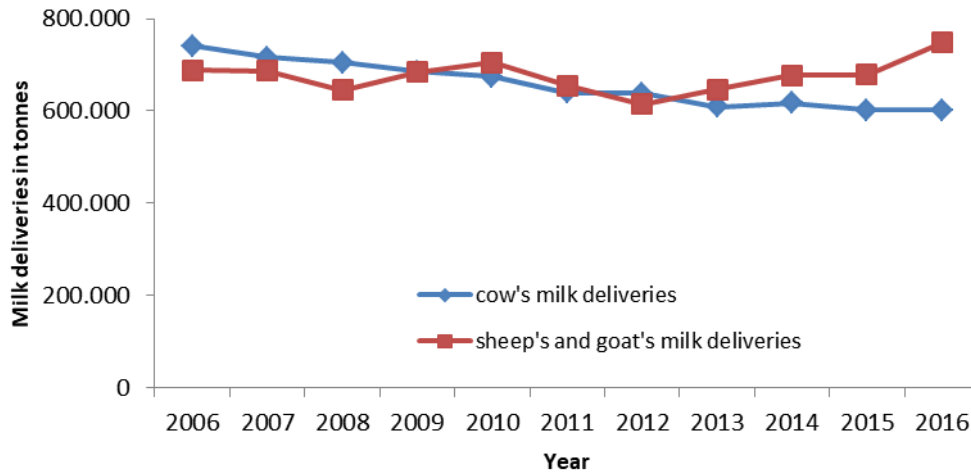(Data source: Hellenic Agricultural Organization, 2017)

Figure 3. Evolution of annual raw milk deliveries (expressed in tons), 2006-2016
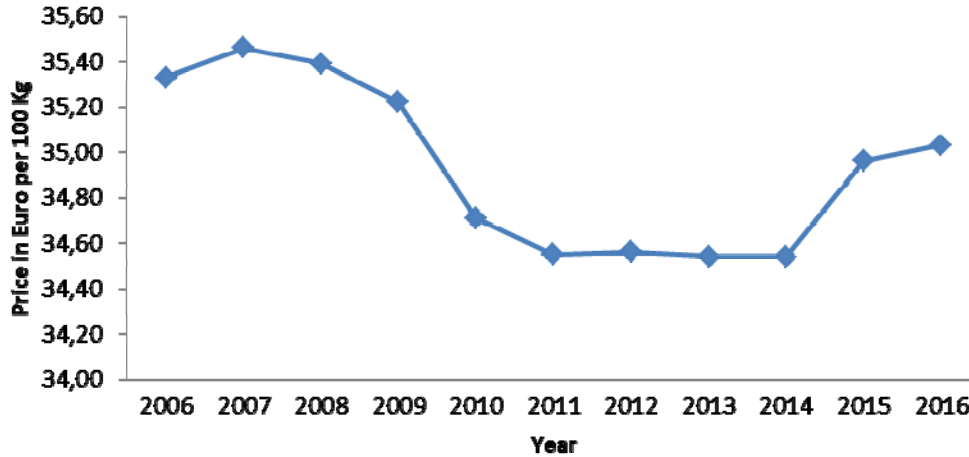(Data source: Hellenic Agricultural Organization, 2017)

Figure 4. Evolution of raw cow's milk prices (expressed in Euro per 100kg), 2006-2016
(Data source: European Milk Market Observatory)

As seen in Table 2, the main dairy products produced are soft cheeses (primarily FETA cheese) followed by 'strained yogurt', the type that made Greek yogurt famous worldwide. Other types of cheeses and yogurts follow.

Table 2.
Annual dairy production in Greece per product type (expressed in tones), 2010-2016

	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
soft cheeses	120.403	117.741	110.448	130.012	127.832	128.988	151.641
hard and semi-hard cheeses	59.360	46.522	41.090	35.627	43.058	37.353	29.261
whey cheeses	27.943	24.542	22.537	22.234	21.843	24.259	22.444
cheese type products	5.764	7.088	7.683	4.792	4.485	5.806	4.526
processed cheeses	186	154	143	180	180	214	166
cow's milk yogurt	27.389	26.365	26.597	29.269	39.144	32.721	29.280
sheep's milk yogurt	10.676	10.683	10.448	10.350	10.961	11.100	11.575
goat's milk yogurt	207	278	355	396	518	755	1.143
strained yogurt	53.943	55.243	54.295	56.122	60.896	72.184	90.205
other yogurt	3.096	3.314	3.772	2.714	4.510	1.369	1.668

(Data source: Hellenic Agricultural Organization, 2017)

With respect to the trade of dairy products, both within and outside the EU, there is an upward trend during the last decade, particularly after the drop of 2012. The share of FETA cheese in this trade fluctuated around 38% (Figure 4).
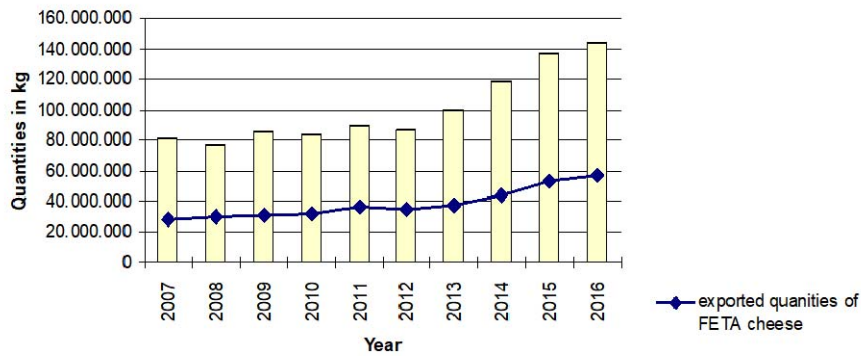
Figure 5. Evolution of total dairy exports from Greece and related share of FETA cheese, 2007-2016
(Data source: Hellenic Ministry of Rural Development and Food, 2017)

In the context of the European milk crisis, the conditions described for Greece set the backdrop for the following sustainability quest that attempts to contribute to policy design towards an exodus from the crisis.

The Greek dairy sector has the opportunity to capitalize on its strengths emanating from its high quality produce and reputation, but it seems of utmost importance to steer structural changes in directions that foster a more sustainable development overall. Hence, the transformation and the adaptive capacity of the sector has become a key question for inducing systemic changes that require more critical reflection of conventional wisdom and approaches, and openness to ideas and practices that are outside the mainstream (Knickel et al., 2017). Following this path, we investigate the sustainability of the studied milk sector based on the knowledge, observations and data collected concerning (a) the innovation capacity of the sector and (b) the sustainability of the relationship of key actors in the dairy chain such as milk farmers and the processors. Their innovation capabilities and their relationship will determine any future changes that will take place towards the sustainable development of the sector.

4   Sampling and data collection

According to data on the structure of the milk sector as obtained from the competent Dairy Department within the Hellenic Ministry of Rural Development and Food, 32 out of the 51 prefectures, being the main milk production areas, were selected as the study area of the research. As the population of interest, which consists of the dairy farmers and processors, was very large for conducting the survey, a convenience sample was used instead. A questionnaire that was first pre-tested for comprehensibility, clarity of language, ease of use and common terminology understanding (familiarity of terms), was prepared in 2014. Additionally, a cover letter accompanied the questionnaire, explaining the scope and the intentions of it, clarifying to the participants that there is no right or wrong answer. The questionnaires were completed anonymously (Podsakoff et al., 2003).

In order to increase the response rate, we used a combination of methods in delivering the questionnaire. Due to the very large target population, we sent the questionnaires by post or electronically (e.g. e-mail) to selected milk farmers' union representatives and milk buyers/processors throughout the main milk production areas of Greece (complete list was provided by the Hellenic Milk Organisation) with the help of rural extension agents. In certain cases, these governmental agents did a handout of questionnaires or conducted face-to-face interviews of individual farmers. All in all, our sample was a convenience sample with a purpose. A justifiable use for a convenience sample is for exploratory purposes, that is, to get different dimensions of a problem, to probe for possible explanations or hypotheses, and to explore constructs for dealing with particular problems or issues (Ferber R., 1977), exactly the scope of this study. Moreover, our sample is entirely relevant to the population of interest and serves the analytical purpose.

The questionnaire administration procedure resulted in the collection of 188 questionnaires with a response rate estimated at about 30%.

The respondent's geographical distribution covered the main milk production areas of Greece. Farmers and processors producing or processing milk from any dairy animal (cow, sheep or goat) were included. The basic demographics concerning age were similar between the farmers and the processors. Approximately half of them were up to the age of 45 and the rest above 45 up to 69. As expected, that

was not the case with the level of education. Whereas 53.1% of the processors had a college or university degree, the respective percentage for the farmers was only 8% (39.9% of farmers had obtained only primary education that accounted mostly for the elder respondents). The percentage of income from milk production at the farm level was between 15%-100% with a mean value of about 68%. At the processing level, milk is processed mainly to cheese (by 74,5% of the processors of which 61.7% are producing products with protected denominations of origin-PDO). Exporting does the 36.2% of the respondents. The percentage of the country's raw milk that is channelled to the market through dairy cooperatives is about 13% (EU-MMO, 2017). Further comparable economic characteristics of both farmers and processors in the sample that contribute to their overall profile are presented in Table 3.

Table 3.
Economic characteristics of the sample

	Farmers	**Processors**
Number of employees[1]	5,50%	62%
Members of a cooperative	45%	6%
Implementing some kind of funded development program	58,50%	51%

[1] percentage of respondents with 0-5 employees including family members where applicable

5   Results and exploratory theory development

In this section we present the results and analysis of data collected for evaluating 'innovation capacity' and 'relationship sustainability'. For the relationship sustainability concept, a theoretical model is structured and its estimation strategy explored.

5.1   Evaluation of innovation capacity

Within the above framework, to estimate the innovation capacity of the dairy sector, focusing on the dairy farmers and respective processors, we empirically analysed certain characteristics, such as (a) their stance towards new technology adoption, and (b) the dynamic capabilities expressed by their business relationships.

Regarding the evaluation of the innovation capability of the sector, the analysis includes the degree of incorporation of IT systems in different operation stages and, specifically, their stance towards electronic traceability systems. Electronic traceability systems are considered a valuable tool in relation to the food safety aspect but, nowadays, they are crucial also for the assurance of credence attributes in foods as referring to country of origin, fair trade, organic production, etc. These attributes are communicated to the consumers mostly through labelling. In this regard, their adoption in the dairy sector is of high importance for certifying and capitalizing on the differentiation and the added value incorporated in the dairy products, pursuant to a sustainable development strategy (Pappa et al., 2018).

Technology adoption

Overall, results show that IT adoption by both farmers and processors is still low. At the farm level, the only noteworthy IT system is the animal identification system, although this is adopted by merely 29.3 % of the respondents. At the processor level one can observe a relatively higher diffusion of IT systems. About 20% of the respondents are operating an ERP system, 28.9% some kind of software monitoring/managing their production, 22.2% use quality control software, while a slightly higher percentage of 33.3% of the respondents have some kind of storage software installed. Only 15.6 % of the processors stated that they operate an integrated electronic traceability system and even less, only 8.9%, stated Radio Frequency Identification (RFID) usage for their products.

The stronger common beliefs among farmers and processors about the electronic traceability systems can be observed regarding what they perceive as clear benefits of these systems. Such benefits include the certification of product authenticity; the decrease of problem occurrence; improvements in communication and cooperation; the anticipated difficulties regarding the resources necessary to implement and operate an electronic traceability system; and the assessment that "there is no market demand nowadays for such systems." At the individual farm level, the stronger beliefs centralise on the cost of installation and operation of electronic traceability systems, whereas these issues seem to worry the processors much less.

Dynamic capabilities of the dairy sector

As stated by Barreto (2010, p. 277), "Rather than looking for formulas for generalized effectiveness, researchers should recognize that the value of dynamic capabilities is context dependent." In order to evaluate the dynamic capabilities that stem from business relationships within the dairy sector, as a proxy for the sector's innovation capability, we analyse the *competitive, cooperative and coordinated* relationships between milk farmers and processors (Storer and Hyland, 2009).

Farmers consider *competition* with other farmers mostly with respect to the quality characteristics of the milk and not regarding the price, whereas processors do not differentiate between those areas of competition. Competition also affects differently farmers' and processors' decisions to undergo changes within their establishments. Although 31.9% of the farmers state that they need to follow an example to implement changes, that is not the case for the processors since only 6.4% stated that they adopted changes after having seen them implemented by other processors.

Regarding their *cooperative* relationships, joining a collective action scheme is more important for dairy farmers than for dairy processors; 68.1% and 17%, respectively. In founding a collective action group, 68.1% of the farmers, compared to 31.9% of the processors, consider that it is necessary to have a pioneer starting the procedure. About 64.5% of the farmers believe that the difficulty of establishing a producer group/collective action initiative lies in the lack of trust compared to the lower 38.5% of the processors who share this belief. The above relates also to the fact that a higher percentage of the processors (85.1%) believe that there is transparency in the negotiations with their suppliers, compared to the lower 53.6% of the farmers that share this belief when it comes to their buyers. Both farmers and processors consider that pursuing common goals is very important for a collective action group (81.2% and 72.3% respectively). However, the majority of farmers (73.9%) believe that the most important justification for collective action is the collective negotiation of product prices (the respective percentage for the processors is only 36.2%).

Coordination through inter-professional organizations does not appear to be very popular among both dairy farmers and milk processors. Unlike processors, most farmers believe that the absence of them in the dairy sector is due to a lack of support from the State.

The above findings underline a deficit in innovation capability that also reflects on the sustainability level of the relationships within the dairy sector. In order to evaluate further the sustainability of the relationships between dairy farmers and milk processors and their respective 'most important' buyer or milk supplier, we analysed the data reflecting their own perception about the sustainability of these relationships and, subsequently, to formulate research hypotheses about the factors affecting 'relationship sustainability' and propose a preliminary theoretical model.

5.2   Evaluation of relationship sustainability

Relational exchanges in any agri-food sector are not simple. Truly collaborative relationships are a constant quest in order to succeed in the sustainability journey. For this part of our research we exercise behavioral approaches that are not uncommon in agricultural studies (Burton, 2004).

Although no single theory exists in the literature defining the specific dimensions of sustainable relationships, empirical studies suggest that sustainable relationships are defined by variables such as mutual trust, commitment and satisfaction (Lages et al., 2005; Rota et al., 2013) or otherwise that these variables refer to the relational capabilities being part of a firm's sustainable practices, derive only from shared resources among partners and contribute to improved organizational performance (Cao and Zhang, 2011).

Regarding the theoretical approach on the "relationship sustainability", while we agree with Fisher et al. (2009) and others (e.g., Rota et al., 2013) on this construct being the cause of high trust, commitment and satisfaction. Nevertheless, we have another approach on the determinants of relationship sustainability and the factors influencing it.
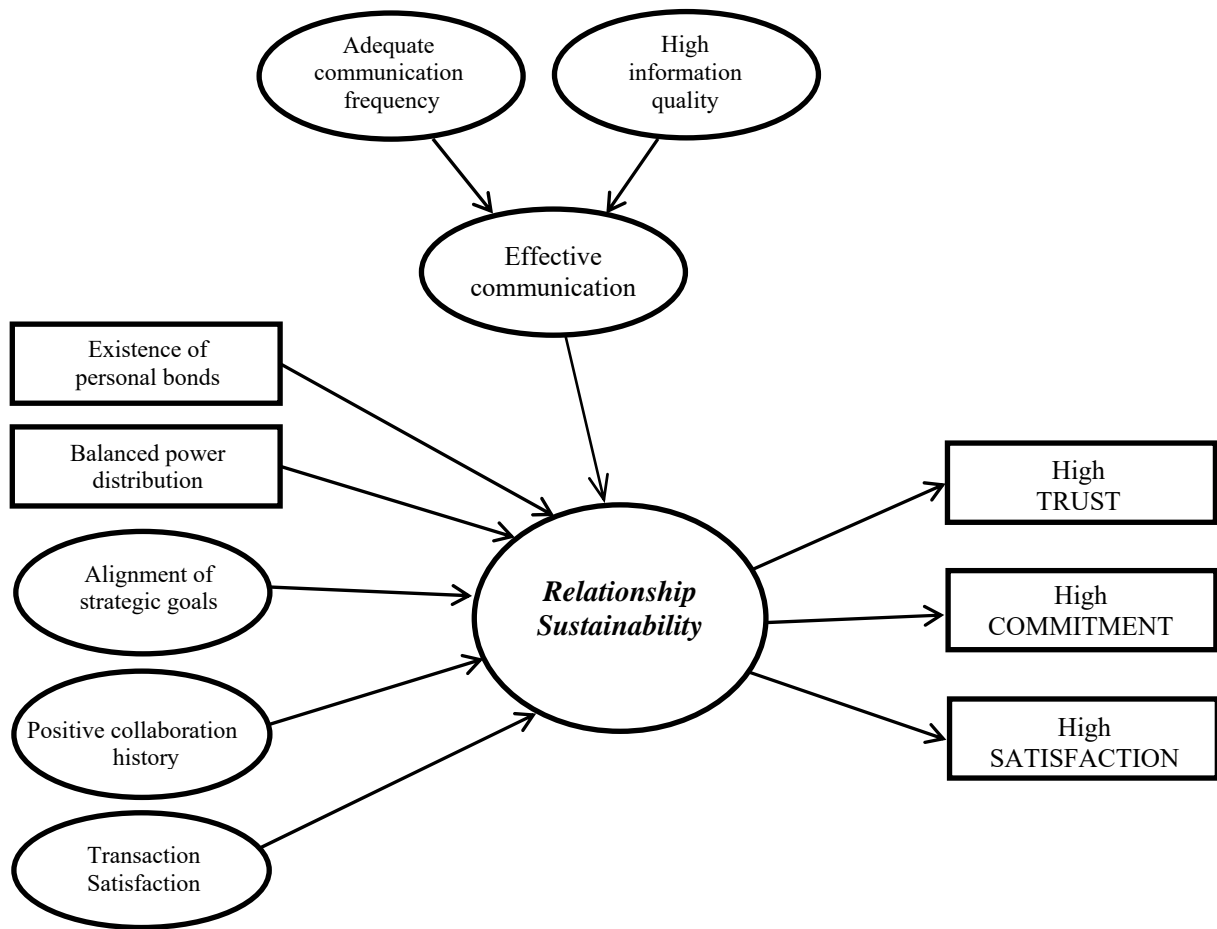
Figure 5. Proposed theoretical model constructing 'relationship sustainability'.

Our preliminary theoretical model of 'relationship sustainability' and its determinants is presented in Figure 5 and the proposed hypotheses about the factors affecting relationship sustainability, the statements and respective constructs are summarized in Table 3.

The hypotheses summarized in Table 3 serve only as a starting point to theory development in the course of learning about the data and the phenomena underlying them. We adopt an exploratory approach, although the distinction between confirmatory and exploratory techniques is not always clear-cut. We use an exploratory technique but there is an existing conceptual framework (hypotheses of existing theories and concepts) that influences our decisions and the alternative routes that we seek to confirm. The structural modelling of our hypotheses comprises of a path model (Figure 5) that visually displays the hypotheses and variable relationships. Constructs, i.e. variables that are not directly measured, are represented as ovals. The indicators that are single - items directly measured from the raw data are represented in rectangles. Relationships between constructs as well as between constructs and their indicators are shown in single-headed arrows representing causal relationships. If the direction of the arrows is from the construct to the indicator variables (or items), the assumption is that the indicator, that is called a reflective indicator, is a consequence of the construct and not a cause. Reflective indicators associated with a particular construct should be highly correlated with each other and interchangeable. Any single item can generally be left out without changing the meaning of the construct and the fact that the relationship goes from the construct to its measures implies that if the evaluation of the construct changes all indicators will change simultaneously. If the direction of the arrows is from the indicators to the construct, the assumption is that the indicators cause the construct so that they are formative and not interchangeable. Each formative indicator captures a specific dimension of the construct. All the formative indicators together form the meaning of the construct which implies that omitting an indicator potentially alters the meaning of the construct.

Table 3.
Valid Percentage of the respondents that clearly agree with the respective statement regarding the quality of their relationship with their most important milk buyer/supplier

Hypotheses	Statements/Items	Constructs/ Variables	Dairy farmers	Dairy buyers
Effective communication in terms of high information quality and adequate information quantity positively influences Relationship Sustainability	1. The communication frequency with our most important buyer/milk supplier is satisfactory	Effective Communication	55.9	80.9
	2. Our relationship with our most important buyer/milk supplier is characterized by frequent communication and discussions		34.1	65.9
	3. The quality of communication with our most important buyer/milk supplier is high		43.7	68.1
	4. Information given by our most imortant buyer/milk supplier is reliable		35.8	58.7
	5. Our relationship with our most important buyer/milk supplier is characterized by market information sharing (for example competition, price evolutions, client or consumer demand)		25.7	58.7
Balanced power distribution among actors positively affects Relationship Sustainability	6. Our relationship with our most important buyer/milk supplier is characterized by balanced power distribution	Balanced power distribution	29.3	75.6
Alignment of strategical goals among actors in the agrifood sector positively affects Relationship Sustainability	7. With our most important buyer/milk supplier we decided upon a common strategy	Alignment of strategical goals	22.1	23.9
	8. With our most important buyer/milk supplier we decided upon the modes of handling of big market disturbances		12.6	17.8
	9. With our most important buyer/milk supplier we discuss modes to react to market changes		31.3	47.8
Existence of personal bonds positively affects Relationship Sustainability	10. Our relationship with our most important buyer/milk supplier is characterized by strong personal bonds	Existence of personal bonds	20.6	48.9
Positive collaboration history positively affects Relationship Sustainability	11. Our relationship with our most important buyer/milk supplier is based on a positive collaboration history	Positive collaboration history	58.5	89.1
	12. In the past there were problems in our collaboration with our most important buyer/milk supplier but they were subsequently resolved		31.4	47.8
Acceptable transactions among the actors in the agrifood sector positively affects the Relationship Sustainability	13. Our transactions with our most important buyer/milk supplier are satisfactory	Transactions satisfaction	64.7	86.7
	14. The payment system (e.g. including any advance payments, time frame etc.) that exist with our most important buyer/milk supplier is satisfactory		54.1	80.4
	15. Milk producer prices are equilibrated the last five years based on the current circumstances		22.8	71.7
Sustainable relationships result in high trust among actors in an agrifood sector	16. We have high trust in our most important buyer/milk supplier	High Trust	36.3	48.9
Sustainable relationships result in high commitment among actors in an agrifood sector	17. We have high commitment towards our most important buyer/milk supplier so that we do not seek for alternatives	High Commitment	31.9	40.4
Sustainable relationships result in high satisfaction among actors in an agrifood sector	18. Our relationship with our most important buyer/milk supplier is highly satisfactory	High Satisfaction	37.5	61.7

The construct of 'effective communication', that we consider as a core concept contributing to the formation of relationship sustainability, is operationalised at a higher level of abstraction formed by two first –order constructs that capture separate attributes of effective communication. Both dimensions of 'effective communication', 'adequate communication frequency' and 'high information quality' are measured using reflective items. The importance of communication in business relationships has been well established in literature (Rota and Zanasi, 2011) and highly identified in fostering a positive collaboration environment (Beske, Land and Seuring, 2014). Specifically in the agri-food sector, effective communication and data exchange together with enhanced coordination mechanisms have been highlighted as being among the critical success factors for sustainable value chain creation (Fischer, 2013; Lehmann, Reiche and Schiefer, 2012; Fearne, Hughes and Duffy, 2001).

Relatively, we argue that the positive collaboration history is a determinant of relationship sustainability rather than a result as suggested by others (Fischer et al., 2009). Collaboration experience that has been collected through the positive cooperation in the past, through joint or successful problem solving or conflict resolution demonstrates a partner's reliability or otherwise trustworthiness and hence positively influences the trust levels (Fritz and Fischer, 2007; Fischer, 2013) and determines the relationship sustainability. Furthermore, we argue that the 'key people' are the ones that form the personal bonds between business partners the existence of which, we hypothesize that, significantly and positively, affects the relationship sustainability and therefore did not include the 'key people leaving' as an additional variable affecting the relationship sustainability. Likewise, we reformulated "equal power distribution" to "balanced power distribution" considering the quest for balance more appropriate (Hingley, 2005) and added the "alignment of strategic goals" and "transaction satisfaction" as variables positively affecting relationship sustainability (Dania, Xing and Amer, 2018; Gyau, Spiller, and Wocken, 2011; Boniface, Gyau and Stringer, 2012; Schulze, Wocken, and Spiller, 2007).

The construction of the theoretical model and their content validity assessment resulted from a combination of literature review and exploratory in-depth interviews with people capable of understanding the nature of the concept being measured (i.e. rural extension agents and dairy union representatives who pretested the questionnaire). The statements were formulated to capture respondents' perceptions and the wording was based on previous related research (Fisher et al., 2009), although adapted to allow clear understanding for all respondents (dairy farmers and processors) acting in our study area and modified concerning the factors influencing relationship sustainability.

The original items had to undergo minor modifications and refinement for purposes of clarity and specificity. Based on this feedback, these measures were adjusted and assessed for content validity. Considerable attention was paid to such aspects as the breadth of content covered by the item, consistency of the contents of individual items under a single factor, and clarity of the meaning and comprehensibility of the item. As the number and content of trust, commitment and satisfaction dimensions still remains to be agreed on and due to the difficulties in the operationalization and measurement of these inter-organizational concepts, it has been argued that they could and should be treated as one-dimensional (Fritz and Fisher, 2007; Fisher et al., 2008; Fisher et al., 2009; Reynolds et al., 2009; Fisher, 2013), we followed this path based on the suggestion of Seppänen et al. (2007) that, studies applying the same theoretical approach should share at least the common conceptualization and components, although adjusted according to the context. The final selection of statements that function as the items of measurement, or else, the indicators of our constructs/variables, was included in a separate part of the questionnaire presented in section "Sampling and Data analysis" used for the data collection.

The proposed hypotheses about the factors affecting relationship sustainability and causing high trust, commitment and satisfaction among the actors of an agri-food sector are presented as following accompanied by a preliminary evaluation using descriptive statistics for the exploratory approach preceding any testing method:

H1: 'Effective communication' in terms of 'high information quality' and 'adequate information quantity' positively influences 'Relationship Sustainability'.

Effective communication, which is essential for achieving high quality and sustainable relationships between business partners in general, and within the agri-food sector specifically, was in our investigation a factor quite differently evaluated by dairy farmers and dairy buyers. Although communication frequency is characterized as satisfactory by 80.9 % of dairy farmers, reaching the highest agreement among the statements, only 5.9% of the farmers share the same opinion. Comparing the differences between the percentages measuring the stance of farmers and buyers towards the rest of the statements measuring the 'effective communication' construct, it is clear that their perceptions of their communication quality are quite contrasting. Dairy farmers do not seem to believe that adequate discussions and information sharing is taking place. Effective communication over time contributes towards a balanced power/dependence relationship. The balanced relationship implies that each actor is willing to be reasonable in sharing a growing value pie as they have limited attempts to cut more than a "fair share" from their partner (Wilson, 1995). Pushing too hard may damage the relationship and risk the value being created, hence, we hypothesise that:

H2: 'Balanced power distribution' among actors positively affects 'Relationship Sustainability'

It is very important to point out the contradictory perception farmers and buyers stated towards 'Balanced power distribution' amongst them. Although 75,6% of buyers states that their relationship with their most important milk supplier is characterized by a balanced power distribution, only 29.3 % of dairy

farmers share this belief. A balanced power distribution would also contribute towards an alignment of strategical goals aiming at value creation and co-evolvement that would furthermore affect relationship sustainability. The third hypothesis is formulated as follows:

H3: 'Alignment of strategical goals' among actors in the agri-food sector positively affects 'Relationship Sustainability'.

The 'alignment of strategic goals' construct is measured through items that aggregated the highest agreement among dairy farmers and dairy buyers. Both actors of the dairy chain do not state to co-decide common strategies or modes of handling significant market disturbances, which are not unusual in the agri-food sector, but might discuss modes to react to market changes. Approximately 48% of dairy buyers and 31.3% of the dairy farmers state that they are involved in such discussions.

The concept of the aligned strategic goals is otherwise described in the literature as the 'mutual' or 'shared' goals concept which provide a strong reason for relationship continuance, hence sustainability, especially in times of a crisis (Wilson, 1995). Defining the purpose of the relationship will help the actors clarify their mutual goals and align their strategies if at the same time strong personal bonds exist among them. Therefore we hypothesise that:

H4: 'Existence of personal bonds' positively affects 'Relationship Sustainability'.

Strong personal bonds between farmers and processors contribute toward a healthy business relationship positively. Farmer-processor relationships in the dairy sector are often characterized by commercial transactions carried out on traditional local or regional spot markets where business partners tend to know each other and hence, eventually affect the quality of the relationship and subsequently its sustainability. The development of personal bonds is a result of favorable partner attributes such as "honesty," "integrity," and "reputation," which have trust-enhancing effects and foster relationship quality (Fisher, 2013). Our data show that 89.1% of the buyers consider their relationship with their most important milk supplier to be based on satisfactory collaboration history; only 58.5% of farmers state the same about their relationship with their milk buyer. We hypothesise that:

H5: 'Positive collaboration history' positively affects 'Relationship Sustainability'.

When the actors of an agri-food sector have a positive collaboration history they benefit from critical phases which have been endured and successfully resolved and from enhanced stability of relationships by reducing the probability of actors switching to other buyers or suppliers (Fischer and Reynolds, 2010). Collaboration experience cannot be developed quickly but, joint or successful problem solving or conflict resolution in the past demonstrates a partner's reliability. Another important factor affecting relationship sustainability is the perception the actors of the agri-food sector have regarding their transactions with their buyers/suppliers. We hypothesise that:

H6: 'Transaction satisfaction' among the actors in the agri-food sector positively affect the 'Relationship Sustainability'.

Within the construct "Transaction satisfaction" we include the positive level of transaction satisfaction that includes the price satisfaction level which is the farmers'/buyers' perception of the milk price. As already stated in literature (Gyau et al., 2011), actual prices paid to the farmers is not the most important factor which influences the quality of their relationship with the dairies but rather, behavioral norms such as the perception of the milk price as well as the presence of relational norms. Broader positive transaction satisfaction is positively contributing towards sustainable relationships between dairy farmers and buyers.

Based on the analysis of our data we conclude that it is significant to highlight the results on the perceptions of dairy farmers and buyers regarding their transactions. Although, 86.7% of buyers affirm that their transactions with their most important buyer/milk supplier are at an acceptable level, only 64.7% of dairy farmers do so. The span is even wider concerning their positive stance in relation to the existing payment system and is at its highest regarding their different views towards milk prices. 71.7% of milk buyers believe that the prices they pay the last five years are equilibrated based on the current circumstances but only 22.8% of the milk producers share the same estimate. This point, together with the relatively low percentage of milk producers declaring clearly to have high trust in and commitment towards their most important buyer (36.3% and 31.9%, respectively), is crucial for the assessment of the sustainability of their relationship.

Future research should test the aforementioned hypotheses. Structural equation modelling (SEM) seems to be a promising empirical methodology to use in this endeavour as it offers many advantages, specifically Partial Least Squares (PLS) – SEM (Espositi Vinzi et al., 2011).

6   Discussion

Our research explores the concept of sustainability in the dairy sector through investigating its innovation capability and the sustainability level of the relationship of the main actors, namely dairy farmers and processors. Most related literature focuses on a firm's ability to adopt sustainable practices but not a sector as a whole. For example, Hoffman et al. (2012) affirm that the adoption of advanced technology, collaboration experience and innovative capacity are capabilities that promote a firm's ability to continuously implement sustainable practices. Similarly, Amui et al. (2017) assess physical capital resources, such as technology and human capital, as important factors that drive sustainability. Our investigation sheds light not only focusing on an individual firm but both on farmers and processors who, in spite of their contrasting interests, have to find a way to cooperate in order to achieve sustainability of the dairy sector.

Our main results indicate an overall deficit in the innovation capability of the dairy sector regarding the dimension of (a) its stance towards new technology adoption, and (b) the dynamic capabilities expressed by the business relationships within the sector among dairy farmers and processors. That means a shortage in both technology and human capital that are among the most important drivers of sustainability. The fact that at processor's level a relatively higher diffusion of IT systems can be observed is not sufficient to overcome the overall low adoption of IT in the sector. The same insufficiency can be observed in relation to the dynamic capabilities of the sector expressed as the perceived competitive, cooperative and coordinated relationship between milk farmers and processors. The evaluation of the dynamic capabilities offer useful insights into the opportunities actors can build upon in operating supply chains in a sustainable manner. A detailed description of dynamic capabilities for sustainable supply chains is still scarce in the literature (Beske et al., 2014). The management literature provides inconclusive results. Scholars like Teece (2007) argue that dynamic capabilities are not observable and therefore do not represent best practices, while others contend that this is exactly what dynamic capabilities are (Eisenhardt and Martin, 2000).

As no single theory exists in the literature defining the specific dimensions of sustainable relationships, our observations, which resulted in an estimation of an inadequate sustainability level of the relationship among the actors of the dairy chain, contribute to the exploration of the theoretical concept of sustainability in an agri-food sector. Additionally, we elaborated on a theoretical model structuring the factors contributing to the 'relationship sustainability' variable and the variables of trust, commitment and satisfaction that it reflects, in line with other empirical studies (Lages et al., 2005; Rota et al., 2013). Others consider that these variables of trust, commitment and satisfaction refer to the relational capabilities being part of a firm's sustainable practices, derive only from shared resources among partners and contribute to improved organizational performance (Cao and Zhang, 2011).

Regarding the theoretical approach on the "relationship sustainability", we differentiate on the determinants of relationship sustainability and the factors influencing it in comparison to other related work (Fisher et al., 2009; Rota et al., 2013) hypothesizing 'effective communication', 'balanced power distribution', 'alignment of strategical goals', 'existence of personal bonds' and 'positive collaboration history' being the most important relational factors influencing the relationship sustainability of the dairy sector and an agri-food sector overall. For grounding this generalization future efforts shall focus on verification of formulated hypotheses and for this, PLS – SEM has been evaluated as a useful tool due to its prediction-oriented variance-based approach that focuses on key target constructs in the model, as 'relationship sustainability', and aims at maximizing their explained variance (i.e., their R2 value) by different explanatory constructs, especially when these are formatively measured and therefore particularly useful for explanatory constructs (e.g., second order hierarchical component construct of "effective communication") (Hair et al., 2012).

The importance of our work lies in enriching the knowledge about sustainability of the agri-food sector but also exploring the factors affecting sustainability so as to offer tools to overcome crises. We highlighted that inadequacy in the innovation capability and the sustainability level of relationships affect the whole dairy and agri-food sector in a way that increases its vulnerability in case of crisis. Beyond the economic resources that are undeniably important for overcoming a crisis, in an agri-food sector the technology capital and the human and social capital, through the prevailing relational dynamic capabilities, will strongly affect the exodus from the crisis. Even the important issue of who will be responsible for the crisis management and which governance mechanisms are in place has to do with relational capabilities within the agri-food sector and the sustainability level of the relationship between its actors. Crisis management calls for quick adaptations and alignment of strategies among farmers and processors, through effective communication of the whole sector where personal bonds and balanced power distribution exist, tested through positive collaboration and transaction history that all together

induce high trust, commitment and, in the end, satisfaction. The higher the sustainability of an agri-food sector the higher its ability to cope with crises and overall risk management.

Improvement of innovation capacity including dynamic capabilities such as collaboration and cooperation is a prerequisite for building a sustainable agri-food supply chain, as stated also by others (Bijman et al., 2012). Similar, results about the importance of innovation capacity, focusing on the technology adoption and specifically on traceability systems, as a valuable tool toward sustainability in agri-food chains have been reported by Kraisintu and Zhang (2011), Brofman Epelbaum and Garcia Martinez (2014) and Pappa et al. (2018). In parallel, the importance and effects of positive behavioural and relational conditions for improving the sustainability level in agri-food chain are also corroborated by others e.g. Rota et al. (2013), Rota et al. (2014) or Touboulic and Walker (2016).

Efforts toward strengthening the innovation capacity and the favourable relational conditions for sustainability should be a priority for each individual actor of an agri-food sector and for each agricultural policy strategic plan along with the environmental and climate objectives that have been set as mandatory at EU policy level (https://ec.europa.eu/commission/sites/beta-political/files/budget-may2018-cap-strategic-plans_en.pdf).

7   Policy implications and conclusions

This paper considers sustainability of an agri-food sector a critical success factor for crisis and risk management of the sector. Therefore we proposed a theoretical framework for the evaluation of sustainability based on the assessment of (a) its innovation capacity (through the estimation of their stance towards new technology adoption and their dynamic capabilities), and (b) the relationship sustainability of the actors operating within the agri-food sector. Research hypotheses have been formulated in order to assess the factors affecting relationship sustainability and its expressions i.e. high trust, high commitment and high satisfaction.

The unit of analysis adopted in this paper is the Greek dairy sector, which has to overcome not only its share of the European milk crisis but additional pressures due to the country's overall financial crisis. Despite the economic crisis, though, the Greek dairy sector has the opportunity to capitalize on its strengths stemming from its high quality produce and reputation. However, in order to do so, it needs to acquire innovation capabilities related to technology adoption and sustainable relationships.

At the policy level, promoting the creation and efficient coordination of a dairy value chain is essential to foster its capability to overcome crises, to handle risks and accomplish its strategic development. Achieving an increased innovation capacity (e.g., new technology adoption such as electronic traceability systems) and sustainable relationships in the dairy sector will also give rise to behavioural conditions conducive to collective action formation. In turn, successful collection action schemes can contribute significantly to the sustainable development of the sector.

Our study highlights the low level of relationship quality within the dairy sector that does not provide a favourable context to promote chain wide collective action initiatives. It is underlined that the percentage of the country's raw milk that is channelled to the market through dairy cooperatives is only about 13% (EU-MMO, 2017). Subsequently, policy recommendations include fostering of collaboration, starting at the farmer level through guidance and support for the creation, management, and governance of producer organizations. For this, a clear and simple legal framework is crucial to replace the existing unstable legal environment that changed far too many times (e.g., Iliopoulos, 2000). Strong and viable Producer Organizations will lower production and transaction costs, increase the bargaining power of farmers and contribute to equitable power distribution among the actors of the chain. The latter is essential in building high quality sustainable relationships based on a shared sense of fairness, distribution of costs and benefits, and a better alignment of strategic goals.

Eventually, the establishment of high quality relationships will lead to higher trust and satisfaction, accompanied by high commitment. These are prerequisites for fruitful collaboration focusing on the strategic development of an agri-food sector. Examples of chain-wide collective action schemes that are considered useful to organize include inter-branch organizations - IBO's (EU, 2017). Other, profit-oriented vertical forms of collaboration to pursue might be networks or netchains (Lazzarini et al., 2001; Hofstede, 2003; Theuvsen, 2004).

As implications for the actors of the dairy chain, we propose that, in order for the dairies to improve the quality of their relationships, they must enhance better communication and exchange of information between themselves and farmers, ensuring more flexibility and cooperation, as well as embarking on

common activities, joint planning and mutual goal setting. These initiatives are more likely to succeed compared to economic factors, such as the actual price of the milk.

All the above presuppose a shift of mentality among the actors involved, which represents a very difficult task to tackle. The organization of holistic training programs, dissemination of best practices, facilitation and guidance and, very importantly, funding opportunities, are policy recommendations our study has to offer. The implementation and operation of electronic traceability systems along the agri-food chain will additionally contribute to valuable information sharing, in the light of transparency, but could also allow value chain creation offering high quality differentiated products.

Improved sustainability and resilience could come through cooperation and diversification of outputs so as to assure that an occurrence of a crisis, like a fall in the price of one agricultural commodity, will have less overall effect on the farm business and the sectors viability and competitiveness.

As further policy implications, we stress the importance of maintaining public intervention mechanisms and a public market management toolkit to be used in extreme circumstances and cases of crisis. Future policy decisions at EU level must focus on helping farmers and processors to achieve sustainability and develop resilience mechanisms providing more information sharing and training.

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