Introduction

Climate change and, particularly, more severe and frequent atmospheric events, such as droughts and sudden variations in local temperatures, late frosts and intense heat waves, are becoming visible to all. Climate change is a global problem that affects everyone's life, the availability of food products, the loss of biodiversity, the degradation of land and freshwater, and the economic stability of production activities (Millennium Ecosystem Assessment, 2005). The scientific community has warned us that temperatures will increase globally; this is likely to have a significant adverse impact on agricultural productivity (Millennium Ecosystem Assessment, 2005), since due to its nature, agriculture depends on specific climate conditions and is therefore particularly vulnerable.

In this context, the European Common Agricultural Policy (CAP) favours and supports farmers' commitment to the protection of ecosystems and the transition to a more sustainable agriculture. This pressure for a more sustainable land use management translates into the CAP reform for the 2014-2020 period, aimed to be a flagship initiative for the delivery of more environmental and climate-friendly agriculture, encapsulated in the slogan "public money for public goods" (Stolze et al., 2016). To achieve the environmental goals, the EU can use the key instruments of Pillars 1 and 2. Specifically, the first Pillar aims at supporting, from a financial point of view, farmers who adopt sustainable agricultural practices (green payment), such as crop diversification, maintenance of existing permanent grassland and the safeguarding of 'ecological focus areas'(edges of fields, hedges, trees, fallow land, landscape features, biotopes, buffer strips, afforested areas or nitrogen-fixing crops). The second Pillar focuses, instead, on rural development funds, especially in terms of restoring, preserving and enhancing ecosystems dependent on agriculture and forestry, promoting resource efficiency and supporting the shift toward a low-carbon and climate-resilient economy in the agricultural, food and forestry sectors.

Organic farming is considered to be a sustainable agricultural practice and has therefore become the true protagonist of the CAP reform. Organic farming has also been recognised for its contribution to public goods (Stolze et al., 2016) and for its potential to contribute to environmental protection, rural develop-

ment and animal welfare (EC, 2004; Häring et al., 2004; Nieberg et al., 2007).

Simultaneously, it must be highlighted that organic farming is experiencing a period of rapid growth: the organic agri-food market in the EU has developed significantly in recent years, reaching a total value of approximately 30 billion Euro with a 13% growth rate in 2015 (Willer et al., 2018).

While EU public policies and funds (such as those established by the two Pillars) have played an important part in the development of the organic sector, regional authorities have showed huge potential in supporting organic approaches, and consequently market development, as they can tailor and adapt policies to the needs of local policy makers and stakeholders. In this regard, the EC proposal for an *Action Plan for Organic Food and Farming* (Lampkin and Stolze, 2006) encourages regions to find the most adequate policy and funding mix to support the development of the regional organic sectors, and it provides a greater degree of regional focus to respond to specific needs (Lampkin and Stolze, 2006). More specifically, regions have to trigger the sustainable development of their territory, favouring the development of technological innovations, clusters and networks as important elements in their strategies, providing a favourable sustainable business environment to foster competitiveness and innovation, especially for small and medium enterprises. At the same time, organic enterprises represent a possible driving force for sustainable economic development, adapting themselves and exploiting their innovative potential to face climate change, regulations and market pressures. In this regard, for example, the distinctive characteristics of organic companies show, compared to the average of agricultural enterprises, simpler legal forms with younger company managers, more flexible land ownership structures, a greater degree of modernization, and more attention to the environment and to multi-functionality (Greco et al., 2012).

Despite the great attention that the organic sector is receiving on a political and scientific level (Watson et al., 2008; Wolf et al., 2015), there is a lack of detailed studies that focus on organic enterprises and, more specifically, on the key drivers at the basis of their business models that enhance the value creation process. The company business model requires a holistic approach in describing how companies do business and in explaining how the value generation takes place in a network that involves suppliers, partners, distribution channels and the local community.

Moreover, in the context of the organic sector, the potential of organic farms to innovate and create sustainable business models has not been investigated.

Specifically, business model innovation has also been identified as a crucial factor for the transition to a sustainable future (Hansen et al., 2009), leading to changes in company business strategies and in designing sustainable

business models. The latter requires the setting up of new business models or reviewing those that exist in a sustainable way. Therefore, the challenge is to focus not only on financial sustainability, but also on environmental and social aspects. This renovation focus allows to generate new opportunities and new ways for the company and its network to create, deliver, and capture value (Bocken et al., 2014; Schaltegger and Wagner, 2011).

The business model features and the consequent sustainable economic, social and environmental development of organic companies and of the local territories in which they operate can also be influenced by the presence of organic districts (or organic regions) that have been increasing in Europe since 2009.

According to the International Network of Eco Regions Association, an organic district is "a territory naturally devoted to organic, where farmers, citizens, public authorities, realise an agreement aimed at the sustainable management of local resources, based on the principles of organic farming and agroecology" (INNER, 2017). Usually, organic districts have a higher percentage of organic farms or organically grown land than the average in other territories.

Belonging to the organic district can lead to the creation of a territorial "brand image" that should help companies to grow and increase their profitability, encouraging cooperation and the creation of information networks, stimulating green tourism and activities oriented to safeguarding the local environment. In addition, companies involved in the boundaries of organic districts should be more inclined to create sustainable value for themselves and for the territory, as they are considered not only as stand-alone entities but as part of a larger, holistic system – the organic district – that brings together a multitude of actors involved in different ways in the value chain.

Indeed, the establishment of these districts aims at safeguarding the sustainable use of the territory, but also at grouping and coordinating the whole organic supply chain, stimulating the territorial development and, in this way, transferring the values of organic farming to other economic and social sectors (Schermer, 2005; Stotten et al., 2017).

However, the progress of organic districts in Europe is still in its early stages of development and the definitions are vague. Little is known about their presence or their possible effects and benefits.

In addition, the phenomenon of organic districts has not been particularly investigated in literature.

Based on these premises, the research has multiple purposes: first, the phenomenon of organic companies and organic districts has been explored, both in Italy and abroad, focusing also on the history, regulations and on the state-of-the-art in order to increase knowledge on such topics.

Moreover, an accurate analysis of the existing literature was carried out to identify the defining elements of company business model in the agricultural sector, placing particular focus on organic enterprises. The literature review aims at bridging the existing gap on business models in the agri-food sector (Ulvenblad et al., 2014). Therefore, the aim of this paper is to increase the understanding and knowledge of company business model in the organic sector, both from a theoretical and empirical viewpoint, with a specific focus on sustainability.

The research also aims to increase the knowledge of how organic districts influence the sustainable value creation of companies operating on their territory.

Consequently, some research questions were identified: firstly, *based on the existing literature, what are the business model characteristics, with a specific focus on sustainability elements, of organic companies operating within organic districts*?

Then, based on a survey conducted on a sample of organic enterprises, *what are the business model features of organic companies operating within organic districts, with a specific focus on sustainability dimensions*?

Finally, *does belonging to an organic district generate benefits for the companies and for the territory*?

The work is structured as follows. First, an overview of the organic sector is presented, together with the regulatory framework and the current trend. Second, the research gives an insight into the phenomenon of organic districts determining the state-of-the-art both at a national and international level. Third, the research method is described, the methodology specifically being twofold: first, a literature analysis is conducted in order to study the existing literature on business models, business model innovation and business model sustainability of organic companies; second, through a survey questionnaire conducted on a sample of Italian organic companies and organic districts, the features of sustainable business models are investigated.

Then, the research shows the results achieved in terms of literature review together with the emerging conceptual frameworks of sustainable business models. After this theoretical review, the research explores the empirical results referred to the general features of organic company business model, with a specific focus on sustainability aspects and districts. Furthermore, the evidence on the economic, social and environmental benefits deriving from belonging to organic districts is presented, together with a company profiling.

Finally, the discussion, conclusions and the future directions of the research are provided.

1.
Organic farming

1.1. Organic definition and principles: a brief overview

In existing literature, there are different definitions of organic farming but if we compare them, we find two common traits: the refusal to the maximum extent possible of chemical products, and the insistence on biological cycles, on the biological activity of the soil, on biodiversity, and on the soil restitution of nutrients through wastewater. Organic agriculture combines traditional conservation-minded farming methods with modern farming technologies, in order to exclude synthetic inputs such as pesticides and fertilizers. Unlike conventional agriculture, which relies heavily on external input, organic agriculture relies on ecosystem management. It is a farming system which excludes the use of synthetic chemicals such as fertilizers, pesticides, or antibiotics in both crop and livestock farming. This is accomplished by using, where possible, cultural, biological and mechanical methods, as opposed to using synthetic materials, to fulfil any specific function within the system (FAO/WHO, 2001).

A detailed and exhaustive definition of Organic Agriculture can be found in the European Commission Regulation 834/2007, which states that: "*Organic production is an overall system of farm management and food production that combines best environmental practices, a high level of biodiversity, the preservation of natural resources, the application of high animal welfare standards and a production method in line with the preference of certain consumers for products produced using natural substances and processes*". Another important contribution to define the organic method comes from the International Federation of Organic Agriculture Movements (IFOAM), which defines organic agriculture as a "*holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity*" (IFOAM, 2005).

Terms such as Organic, Biological, Biodynamic, and Ecological are recognised as organic farming in the EU regulations, although they consist of

a broad spectrum of methodologies which are based on specific and precise standards (FAO/WHO, 2001; IFOAM, 2005).

The general principles of organic farming, summarised in the documents of the IFOAM standards, go beyond simple technical aspects, but aim to affect actions and processes along the entire food supply chain and offer guidance for research in organic agriculture (Niggli et al., 2016). They refer, therefore, to the methods adopted for the management of soil, water, plants and animals at all stages of production, processing, distribution and consumption of products. The organic values of sustainability and earth protection are based on four main principles presented below (Luttikholt, 2007; Stotten et al., 2017):

– Principle of Health: organic agriculture should sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible.

– Principle of Ecology: organic agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.

– Principle of Fairness: organic agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.

– Principle of Care: organic agriculture should be managed in a precautionary way.

Those core principles, which address the ambition of the innovative and inclusive development of organic agriculture (Arbenz et al., 2016), are considered to be an important trigger of sustainability while minimizing the negative effects of globalization (Luttikholt, 2007). Some countries have decided to stimulate territorial development on the principles of organic farming. For example, in Europe, the national Rural Development Plan (RDP), which is the main tool for planning and financing the agricultural and agri-food system in each member state required by the Common Agricultural Policy (CAP), aims to create policies and incentives to convert to organic farming. The interest of agricultural policies on the organic-agricultural method aims to transfer its principles to a territorial, rural development approach, contributing to the social and economic regeneration of a territory. In this way, the principles of organic farming will spread throughout the entire supply chain, including private and public consumers and stakeholders in other economic sectors (Schäfer et al., 2008).

Due to the increasing importance of territorial development, the local dimension has become "*a marketing necessity besides an important point on the organic movement reflection*" (Stotten et al., 2017). Thus, organic farming is not only a sustainable method of production, but a holistic approach (in the

sense of IFOAM) that can create multiple benefits, which can potentially contribute to territorial development (Commission of the European Communities, 2004; Pugliese, 2001; Stotten et al., 2017).

In the next paragraph, a brief description of the history of organic agriculture is made.

1.2. The history of organic agriculture through its main phases

Organic agriculture arose in the early twentieth century and it has gone through several phases: Organic 1.0, Organic 2.0, and Organic 3.0, which is still under development (Niggli, 2014; Rahmann et al., 2017).

The first phase, *Organic 1.0*, is defined as the period of organic pioneers, where the organic phenomenon began to take root. This period was characterised by the growing industrialisation of agriculture and an increase in the awareness of the connections between health, food and the way in which food was being produced. In those years, the need for a radical change in the way of practicing agriculture became apparent.

The beginning of such phase can be traced back to Rudolf Steiner's 1924 course on bio-dynamic agriculture, which triggered the evolution of organic agriculture in Europe (Paull, 2011). Bio-dynamic agriculture proposes an agricultural model based on scientific and holistic knowledge linked to spiritual thought. Steiner's method considers human beings as part of the cosmic equilibrium that has to be understood in order to live in harmony with the environment. It is characterised by the close integration of animal and vegetable productions that allows agricultural activity in a self-sufficient system.

Other pioneers living in different parts of the world began to experiment different ways of practicing agriculture and organic agriculture as we know it. In the 1930s and 1940s, organic farming and soil protection achieved a great relevance in Britain thanks to Lady Eve Balfour and Sir Albert Howard in Switzerland, to Hans Mueller and J.I. Rodale in the United States, and to Masanobu Fukuoka in Japan (Vogt, 2007). These pioneers greatly influenced organic agriculture development in their countries through their farming, advocacy and scientific work (Vogt, 2007). In 1948 in Italy, Alfonso Draghetti (1888-1960) published "Physiological Principles of the Farm" in which he discussed how organic principles can support the theory that the farm operates as a whole system (Draghetti, 1948). Draghetti is acknowledged as one of the fathers of organic farming research in Italy and in 1969; he founded the "Associazione Suolo e Salute" in Turin, along with Francesco Garofalo, professor of phytosanitary at the University of Turin.

The second phase, called *Organic 2.0*, stretches from the 1970s to present. The research and practice of organic agriculture expanded worldwide after the 1960s; organic crop production and animal welfare were further developed in alignment with the practices envisioned by the pioneers. In particular, the expansion of organic agriculture started with the oil crisis of 1973 and the growing sensitivity to agro-ecological issues. Organic 2.0 is characterised by the definition of production and processing standards, the discipline for certifications, the first official regulations and the establishment of a mutual vision that characterise organic agriculture as we know it today. Organic claims became regulated in great detail. Official regulation was first introduced in Europe and in the United States of America in the 1980s. By 2015, 82 countries in Africa, in the Americas, in Asia, in Europe and Oceania had implemented organic regulations. The foundation of IFOAM in 1972 and the first world organic conference in Sissach (Switzerland) can be seen as the starting point of the organisation of the organic movement, followed by the debut of research on organic topics. Because of the support and efforts of individual scientists and organisations such as IFOAM, research facilities and institutions that conduct research on organic agriculture have been established worldwide (Vogt, 2007). During the 20th century, a number of private organisations committed to research on organic food and farming were formed across the world, e.g. the Rodale Institute in 1947, Forschungsinstitut fur biologischen Landbau (The Research Institute of Organic Agriculture in Switzerland, Germany and Austria) in 1974 and Elm Farm Research Centre in 1982 (Frankfurt). Public funding for research on organic agriculture became available during the 1980s and departments of ecological and organic agriculture began to appear in Universities in Europe. Academic researchers also began to be interested to the organic phenomenon: the journal of Biological Agriculture and Horticulture, established in 1982, and the American Journal of Alternative Agriculture (now Renewable Agriculture and Food Systems), established in 1986, were landmarks in the publication of scientific information relating to organic agriculture. Publications of organic farming research in mainstream journals were rare before the late 1980s and early 1990s (Watson et al., 2008); for example, the first publication in the Journal of Agricultural Science, Cambridge was in 1993 (Watson et al., 2008).

Despite the increased attention over the last century to organic agriculture, the steady growth of certified land and the market value of organic products, only 1% of the world's farmland is cultivated organically and the global consumption of organic products is still a small proportion (Arbenz et al., 2016).

Therefore, a discussion about the future of organic agriculture began in 2010 and the term *Organic 3.0* was introduced. Organic 3.0 refers to the next

phase of modern organic agriculture in which organic agriculture is expected to go from niche to mainstream, where the adoption of truly sustainable farming systems and markets based on organic principles and on a culture of innovation, of progressive improvement towards best practice, of transparent integrity, of inclusive collaboration, of holistic systems, and of true value pricing becomes relevant (Arbenz et al., 2016). The strategies for Organic 3.0 include the empowerment of rural areas, eco-functional intensification and the development of food for health and well-being. All these goals are in accordance with the purposes of the United Nations General Assembly (September 2015) which formulated the 2030 Agenda for Sustainable Development and announced the Sustainable Development Goals (SDGs) (UN, 2015). Among the 17 SDGs, two have a special relevance for Organic 3.0 strategies: SDG 2: "End hunger, achieve food security and improved nutrition, and promote sustainable agriculture" and SDG 12: "Ensure sustainable consumption and production patterns" (Rahmann et al., 2017).

For completeness, there will be a discussion about the current debate on the conventionalisation of agriculture in the next paragraph.

1.3. The debate on conventionalisation

The progressive integration of organic products within the food system and its penetration into supermarkets has gone hand in hand with the erosion of the values that had originally characterised the organic sector and with the so-called conventionalisation of organic agriculture. According to the conventionalisation phenomenon, organic farming is becoming a slightly modified version of modern conventional agriculture, resulting in many of the same basic social, technical, and economic characteristics. Smaller farms become bigger, labour is replaced by mechanisation and other industrial inputs, and marketing becomes export-oriented rather than local (Dantis et al., 2009; Hall and Mogyorody, 2001).

The central point of the debate is that companies that have converted to organic production since the 80s-90s are less loyal to the inspiring principles of organic farming than the pioneers of the movement. Furthermore, it is claimed that recently converted companies incorporate more elements of industrial agriculture, with the consequence of reducing potential benefits for the environment, human health, and social welfare, therefore being less sustainable (Abitabile et al., 2013). Contribution to this process comes not only from the entry into the sector of large-scale industrial companies or from the growth and diversification of those which are already present, but also from the diffusion of organic products in conventional commercial channels and

supermarkets. The accusation against the large-scale retail channel (mass distribution) is to have penetrated the organic market, pushing it towards conventionalisation, to "clean up" its image and make it greener (Darnhofer and Bellon, 2009).

The conventionalisation of organic production is also a phenomenon that has gained growing interest in the academic world since it was raised in relation to US farmers (Buck et al., 1997); this phenomenon has also been investigated in other countries and continents, such as Europe (Best, 2008; Darnhofer et al., 2010; De Wit and Verhoog, 2007; Navarrete, 2009), Australia (Lockie and Halpin, 2005), New Zealand (Rosin and Campbell, 2009; Schewe, 2014) and also Brazil, China, and Egypt (Oelofse et al., 2011). Most of these case studies explain how the expansion of organic production towards a more industrial model is in contradiction with its values of sustainability, along with its ethical and social values (Allen and Kovac, 2000). The debate on conventionalisation focuses now on the identification of the theoretical and legislative indicators, which allow to analyse the weakening of organic agriculture principles (Abitabile, 2013; Darnhofer et al., 2010).

2.
The regulatory framework

2.1. The international regulatory framework

The 80s were marked by the strong industrialisation of agriculture, which was overwhelmed by a significant amount of chemicals and pesticides. At the same time, the establishment of the European Economic Community (EEC) and the access of Mediterranean countries into Europe, marked by a strong agricultural vocation, opened the doors of the European market to organic producers.

In this context, the organic movement, which expanded from Europe to America, was especially related to the quality of food and standards that are necessary to create consumer trust and to provide assurance that production processes are similar across different farms (Krishnamurthi, 2016). Consumers supported a persistent demand for organic agriculture, stressing the need for regulation that identifies the criteria that must be respected in order to certify products.

Governments took a while before drafting the legislation to set standards; however, at the end of the 1970s, local and national governments began to regulate organic agriculture (Morgera et al., 2012). The first organic regulations appeared in Oregon and California (United States) in 1974 and 1979 respectively (Greene, 2001; Morgera et al., 2012). In Europe, France was the first country to adopt an organic regulation (1985).

The recognition that organic agriculture could help countries to achieve environmental goals further encouraged Governments to adopt agri-environmental laws to promote organic farming. In response to this requirement in 1991, the European Community introduced the EEC Regulation 2092/91, a regulatory intervention that, for the first time in the history of agriculture, disciplined a production method. Regulation (EEC) n. 2092/91, amended and supplemented several times, defines the technical production rules, the products that can be used for defence, fertilization, preparation and conservation of products and the rules for labelling products. The regulation, therefore, indicates not so much

what is forbidden, but what one needs to do or can use to be able to certify production under organic farming. In 1999, this was integrated with common standards for organic livestock production (EEC Regulation 1804/99).

With the reform of the Common Agricultural Policy (CAP) in 1992 (EEC Regulation 2078/92), measures for financial support of organic farmers were introduced with the European Agricultural Fund for Rural Development (EAFRD), implemented by the Rural Development plan in 2000 and translated into regional support programs. These make Governments become strong drivers for the further development of organic farming (IFOAM and FAO, 2002). Indeed, public funding is essential, especially in the conversion period from conventional to organic as it is characterised by a long-term process (at least 2 years); it requires a high level of commitment to succeed and often entails financial risk.

Direct support to organic and converting producers is seen by some Governments as a means to meet increasing consumer demand as well as to transfer income to farmers. The first country in Europe that introduced public financial support for organic farmers was Denmark in 1987, aiming to cover economic losses during the conversion period.

As part of the CAP Reform, member states implemented various organic farming policies according to this legislative framework (Lampkin et al., 1999). By 1999, all EU member states, with the exception of Luxembourg, had introduced policies to support organic farming within the agri-environment programme (EC Reg. 2078/92). Despite the common framework of this programme and the regulatory base provided by EC Reg. 2092/91, the payment rates, eligibility and other conditions of the schemes in each country vary widely, particularly with regard to livestock production.

Over the last decade, the CAP has been the key policy for the development of organic farming in Europe, as it has programmed to have over 10 million hectares supported by CAP funds through the EU's national and regional rural development programmes.

The rest of the developed world also took part in this organic regulatory process. For example, the US Organic Food Production Act 1990 was set into force in 2000, and in 2002 the United States Department of Agriculture established the standards of the US National Organic Program (NOP).

In Japan, the Japan Agricultural Standards for Organic Agricultural Products and their Processed Foods was set into force in 2001 by the Japanese Ministry of Agriculture, Forestry and Fisheries (MAFF).

The main goals of governmental regulation are to create a set of rules to protect consumers and producers against fraud, and to regulate international trade and certification.