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**Development in Italian Regions**

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# Farmer's Attitudes and Sustainable Agriculture Development in Italian Regions

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## *Abstract*

*This paper focuses the attention on the biodiversity of production system of farmers and the social impact in the environment process related on the economy scale. Farmers in Italian regions are growing fast and are developing new paradigms on sustainable agriculture for development and eco-friendly products for the future of farming. The organic agriculture is one of the production systems that sustain the protection of soil, ensure social and local conditions, and promote highest level of food quality. On behalf of CAP reform 2020 and the Sustainable Development Goals, Agriculture is one of pointed sector and discussed for preservation of environment and the welfare for the future generations. This article will focus the evaluation of the three pilasters of sustainability and the principles of organic agriculture. The methodology of this research is a quantitative model on using data from ISTAT, EUROSTAT database and statistical analysis are employed in this research. Our analysis shows the connection of new paradigms, methods, and estimations on the sustainable development with the organic agriculture and discuss the farmers behaviours' for more sustainable agriculture development and revenue.*

*Keywords: Environment, sustainable agriculture, organic agriculture, farm's behaviours.*

## THEORETICAL FRAMEWORK

Sustainable agriculture is one of the main topics of Sustainable Development Goals. The differences from organic agriculture, agroecological agriculture and conventional agriculture will be discussed in this paper. The agriculture is the major water-use and conservation sector in the European Union (EU), with a very high use ranging from 40 to 80 % of total water usage for agriculture activities in the main EU countries (Stolze, Piorr, Haring, & Dabbert, 2000). In the past, urban water resources management were considered problematic for the cities about the hygienic problems implied. The process of development, globalisation, and industrialization has undergone major changes in urban and agriculture sustainable management. The main linkages between sustainable agriculture management and policies regarding adaptation strategies for a sustainable water use together with knowledge and the presence of farmers participation has been discussed in the previous paper (Miftari, 2019). Farmers are the main actors and they have a big responsibility on conservation, management and protection of environment and biodiversity. In this paper we analyse and made some statistical analysis for age of farmers in Italians regions. We have analyse the agricultural land price for all 20 Italian regions and the average of organic farming land available in Italy from 2012 to 2017 (EUROSTAT, 2018). This article will mainly deal with determination of organic farming with all the aspects and the effects in biodiversity, ecosystem, and society. It' reliefs the relation with environment and combines to the social cultural traditions. Through Social Sciences and especially from

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Sociological studies we will assess this process of transformation in a vertical way which is linked with society. Overall the association between production, food security and consumption is directly interrelated with the evolution of agro-food-systems, as it is discussed within the “production-consumption debate” (Lockie, 2002). Biological agriculture scientist contributes to the enlargement of the concept of human rights to be extended to include such things as social, environmental, and climatic change. This influence has led within the consumption of production directly by the civil society. Other contribution has been done by the enormous conferences with main subject the phenomena of climatic changes and social aspects linked to participation of farmers and consumption of their productions. Traditional food deliveries based on direct supplies or sales in physical market places (farmers ‘markets) were the forerunner of today’s short food supply chains (SFSCs) (Malak-Rawlikowska, et al., 2019). In recent times, short food supply chains and local markets, where farmers sell their produce directly to consumers or with a minimum of intermediaries, have flourished in all EU countries, both in rural and urban areas. (European Commission Reports, 2013). However, this subject of study is mainly interested both social sciences, agricultural and economic purposes. Organic Agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved (IFOAM, 2008). The advanced research coming from other fields of biology or economic disciplines, as well as from other social disciplines and from observation of reality, that could enable a more precise definition of sustainable agriculture. Moreover, the sustainable agriculture as organic farming contribute to reduce the ecological footprint minimized, such as fertilizers and pesticides (Schulze, 2009). Significant initial evidence indicates that organic agricultural systems deliver greater ecosystem services and social benefits (Reganold & Wachter, 2016). In addition, the organic farmers in Italian regions have create a network in order to intensify the challenges of the responsibility and accountability of new technologies. The new technologies application can make organic agriculture more profitable for the farmer. But high costs to adapt technology for individual farmers can be significant adoption hurdles, especially in case of limited knowledge and skills (Waltera, Fingerb, Huberb, & Buchmanna, 2017). The farmers attitudes have an important impact on social policies and the satisfaction of landless farmers in relationship with standard of living and quality of life. All these elements are well related with the knowledge, participation, social security, and the production that farmers offer in the market.

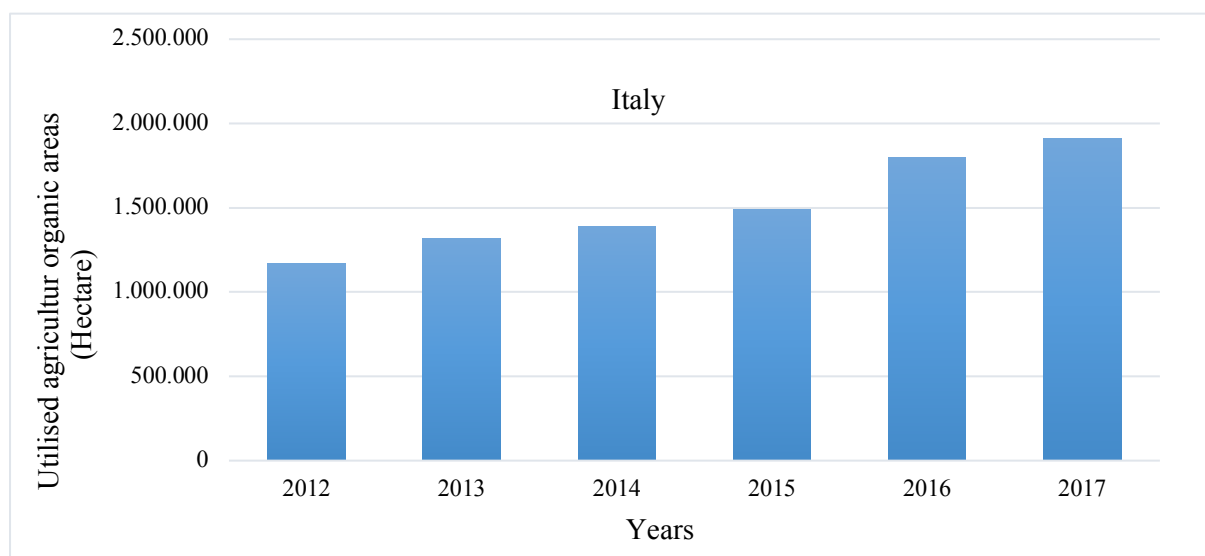
## METHODOLOGY

In this paper we will analyse and elaborate some data from Eurostat regarding the age of farmers in Italian Regions and try to discover if there is any association between the age of farmer and the type of farm. For the elaboration of this information we have fist at all classified the farms types and the group of ageing. The farms type is characterized in organic farming and conventional farming in relation with the land available for a time series from 2012 to 2017. Other aspect is the use and the management of the resource of water, considering it as a fundamental resource to recognise and encourage a more widespread reuse in organic farming. In this case we try to elaborate and consider the application of “polluter pays” or “consumer pays” as a solution for the future sustainability applications. In this point is needed to consider an economic asset capable of market valuation, to understand the right expectation management and market solutions to solve inefficiencies in its management. The Short Food Supply Chains and the Long Food Supply Chains are the two principle applications that we will well elaborate in this paper. Other methods in the context of opportunity to introduce the concentration and the attention on the development of the sustainability, policy on the process of farms activities is the income perception. This issue is considered and developed on behalf of the objectives of the future Community Agriculture Programme to ensure a fair income especially to new farmers. The classification of new farmers is developed and explained above in this paper.

## FARMERS MOTIVATIONS AND ECONOMIC INCOME PERCEPTION

Farmers motivation is the driving force behind personality characteristics, perceptions, previous learning experience and attitudes. From one hand the consumer chooses organic food because they protect the environment, there are no artificial additives, is a natural production, believe in better quality/taste and less pollution etc. From the other hand the farmers produce organic food because there is less environmental impact, preserve local production and because they think they are doing the right thing etc. The well-being of groups of individuals at various territorial level is considered collectively when it involves the goods and services offered from organic farming (Chase, Decker, & Lauber, 2004). Farmers as a factor of production, has clearly shown that, the expansion of human choices among the economic opportunities has changed with the variety of food available in the markets. Even though the most fundamental one is the gainful employment and the possibility to preserve the environment, biodiversity and the cultural traditions, creating a high income for farmers (Dunlap, 2018). Furthermore, we will analyse the relationships between two groups of farmers active and in-active farmers. The active farms are considered the group of which their activity is constantly, and they meant to provide an income from the activity on agriculture sector. The in-active farms are the farms that spend a total of hours on agriculture activity, but this is not the only activity they have at the same time, so maybe a weekend work for helping on an property that they inherit or a part-time work that they decided to do and they don't meant to provide income even would ideally produce all needed food, year-round. This is becoming increasingly popular mechanism among who wish to live "off the grid" and become more sustainable farms and communities. The number of total farms in Italy in 2013 was decreased by 9.2% compared to what was reported by the 2010 Agricultural Census (ISTAT, Istituto Nazionale di Statistica, 6 Censimento Agricoltura, 2010). The agricultural area is decrease in the North-West (-5.7%) and in the Centre (-6.3%), more restrained is in the North-East (-1.7%), in the South (-3,0%) and in the Islands (-0.9%) (ISTAT, Istituto Nazionale di Statistica, 6 Censimento Agricoltura, 2010). During the 2015 the number of organic farmers in Italy is increasing and shows a positive rate during the time. The organic agriculture area with highest values in terms of share is located basically in the following areas: (Puglia, Marche, Calabria, and Sicilia).

Fig. 1 - Total fully converted and under conversion to organic farming in Italy from 2012 to 2017.



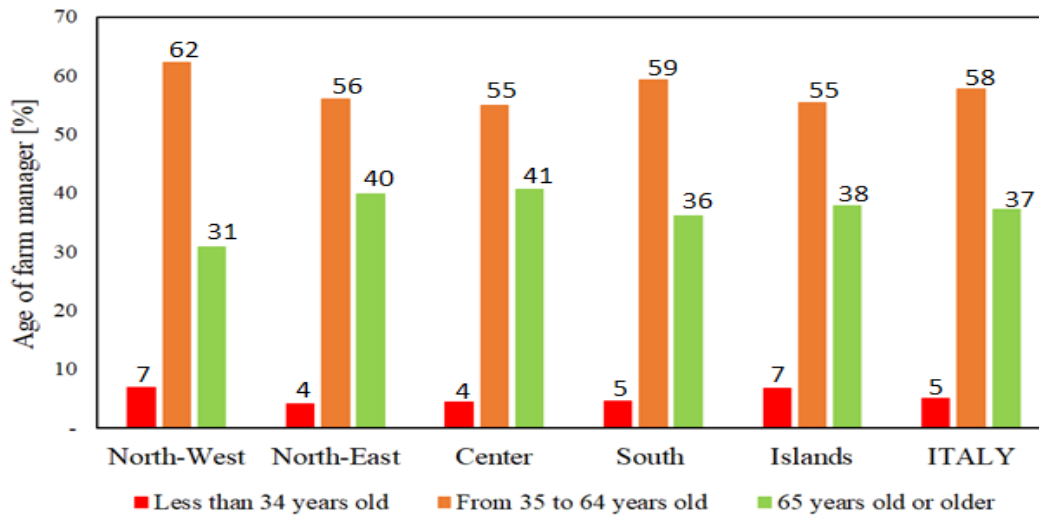
Source: Eurostat 2018

In this chart it is prospected the advancement of number of organic farmers in Italy. It is also reflected the fact that organic farming is particularly present in regions with extensive livestock production

systems based on permanent grassland. The importance of the organic sector is generally lower in the regions of plains where more intensive production systems prevail (European Commission, Facts and figures on organic agriculture in the European Union, 2016) Furthermore, the elaboration in this chart includes total full converted and under conversion organic farming (EUROSTAT, 2018). In economic terms also the labour on farms managed and maintained by the member of holder's family (number of employees) is going down (-8.1%). This is due to the fall in family farms labour (-13.0%), defining as agricultural entrepreneurship which are owned by individuals and followed by the cessation of many small businesses where the number of family labour force exceeds the number of hired workforce. Even though the local and scientific knowledge should be integrated between farmers. The need for scientific information and analysis to inform stakeholder deliberation has been identified by many authors as an essential ingredient in any participatory process (Fischer & Young, 2007). In this context, the total number of days worked in the company are almost stable (+ 0.8%), thanks to the significant increase in non-family labour force (+ 14.3%). Managing water as an economic asset not only in agriculture sector represents an important way to ensure the efficient use encouraging the conservation and protection of water resource and organic farming. The administration in terms of use and preservation in agriculture sector is totally in the hand of stakeholders and cultural traditions of farmers (Turner, Davidson-Hunt, & O'Flaherty, 2003). The law and the directive of Water have been implemented from United Nations at The Dublin Statement on Water and Sustainable Development, 1992, (UNESCO, 1992). Other Assessments and Agreements in international and global level are implemented and adopted for a more sustainable and efficient agriculture production preserving the environment issues. The Common Agricultural Policy (CAP) is the agricultural policy of the European Union. In fact, (CAP) has been destined to undergo many changes during the time. The last legislative proposal was made 1<sup>st</sup> June 2018, where European Commission has presented the legislative proposals on the common agricultural policy (CAP) beyond 2020 (EC, 2018). These proposals for a new EU common agriculture policy CAP aims to make more responsive to current future challenges such as climate change or generational renewal in rural development, while continuing to support European farmers for a sustainable and competitive agricultural sector (EC, 2018).

The sustainable agriculture was introduced for the first time from McClymont on his book "*New Roots for Agriculture*", considering farming in sustainable way and a healthy environment, economic profitability, social responsibility and economic equity, (McClymont, 1980). Sustainability generally focuses on the stewardship business process of farmers and practices of principal government actors, rather than a specific agricultural product. The farmers are at the heart of Europe's society and have a very important role on rural communities on providing vital and sustainable public goods (Fuentes, 2010). The contribution and support of farmers in development of rural areas in European Union and specially in Italian reality is helping new generations of farms to join the "old profession", thought mentoring of young farmers by more experienced ones. The tools for achieving those experiences are planned with the succession plans and improving knowledge transfer from one generation to the next. European Union encourage young farmers to improve access to land through more flexible rules on taxation, inheritance and giving financial support for young farmers (Atari, Yiridoe, Smale, & Duinker, 2009). Thanks to this initiative and the revival of young Italian farmers the number of young farmers it has been considerably increased in Italian regions in the last three years (Coldiretti, 2017). Italy is one of the highest countries in European Union level for the number of young people under 35 in agriculture farms. From a summary of the main results realized from the 6<sup>th</sup> survey of Agriculture made by ISTAT, it is seen that the number of farms increases from year to year (ISTAT, Istituto Nazionale di Statistica, 2019). About 99% of farms operate on family labor and 30.7% of the company leaders are female. The total number of farmers in Italy is 1,620,884 and the distribution in age is mixed.

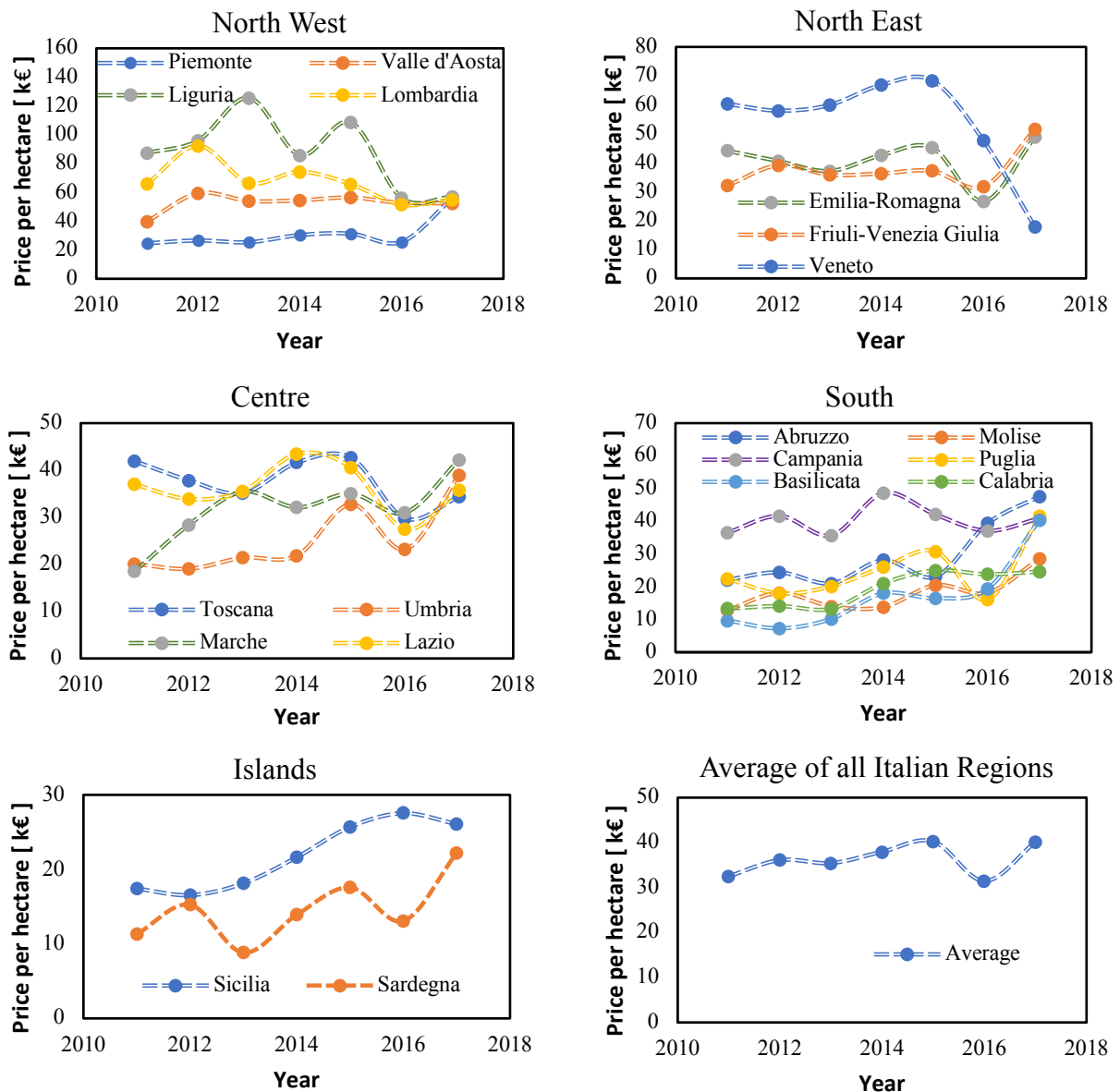
Fig. 2 - Age of farm managers in different Italian geographical regions



In our survey for instance, the first group of farmers have less than 34 years old amount to 82,111 farmers which when expressed in percentage is 5%. The second age group from 35-65 amount to 93,538,700 farmers which when expressed in percentage is 58% and the last age group, 65 and over, amount to 603,386 farmers which when expressed in percentage is 37%. The amount number of Italian agricultural organic enterprises is 57.621 in 2018. According to the survey, farms under 35years old have a surface area of 54% higher than the average, achieve a turnover of 75% higher and have 50% more employees on the farm. Regarding the second group of classification we decided to put together a large group of farmers into the same cluster (35-65 years old), representing in this term the recreationally and multifunctionality of so called new-old-farmers or “age of farming” (Miftari & Musaraj, 2019). The last group of distribution shows the distribution of farmers from 65 years and over. This percentage is almost considerable and important on the agriculture sector for the Italian regions mostly for the role and the attitudes of historical development and culture, which are characterized (Best, 2009).

The charts below show the agriculture economic trend of the average price of arable land 2010-2018. This land is used for organic farming, including the process of the conversation from conventional to organic farming as suggested from European Commission.

Fig. 1 - Agricultural land prices by region (unit Euro per hectare/arable land), from 2010 to 2017.



Source: EUROSTAT 2018

This chart is a panoramic image showing how the price in euro per hectare has been changing for using organic farming during the years that we are considering. Furthermore, the charts show the non-linear price line for different regions as Liguria, Veneto and Abruzzo. The trend of prices for Liguria and Veneto regions have been decrease in terms of price per hectare for arable land from 2015. Specially Abruzzo has undergone an increase of price per hectare for arable land from 2015. Moreover, the oscillations in terms of agriculture surplus has reminded stable over time for the most Italian Regions, there has been a strong growth in agriculture trade surplus in 2017 in most regions. The average of price unit per euro is 36.273 per hectare in the last 7 years calculations and elaborations (EUROSTAT, 2018). Italian Regions have an extremely diversification on the distribution of economic growth, economy extension and perception of income. The perception of agriculture income generated and determined from different limits, of the land owned, which are the economic activities taxed according to the calculations of this method.

## ORGANIC AGRICULTURE VERSUS CONVENTIONAL AGRICULTURE

The definition of organic farming is a friendly farming system that has been existing from the ancient period of living and food production from farmers around the world. The conventional agriculture farming has been developed mostly when the demand for food started to increase as consequence of population growth. It is led to significant increase in production, as a consequence of using very productive inputs (seeds, hybrids, etc.) and also genetically modified organisms, together with a larger mechanization of processes and large-scale usage of water pipe-lines, fertilizers, pesticides and bio-stimulators (Stoian & Caprita, 2019). The social sciences are one means through which researchers and practitioners can come to understand the human dimensions of conservation and natural resource management (Bennett, et al., 2017). The transformation is much more profound than simply tweaking the existing industrial agricultural system. Conversion to organic agriculture production is most defined through regulations adopted by the Council Regulations (EC) No 834/2007 of June 2007. On organic production and labelling of organic agriculture products and repealing Regulation (EEC) No. 2092/91 (European Commission, Regolamento (CE) nr. 834/2007 del Consiglio, 2007), defines organic production as “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”. It involves a given time span as well as specific constraints and procedures, whereby organic principles must be applied to parcels and animals for more than three years (Lamine & Bellon, 2009). The IFOAM definition for organic agriculture combines tradition, innovation and science to benefit the share environment and promote fair relationships and a good quality of life for all involved (IFOAM, 2008).

The Food and Agriculture Organization of the United Nations defines, in “*Codex Alimentarius Commission*”, defines organic agriculture as a “holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity” (FAO, 1999). The). Other authors defines organic farming as a system which avoids or largely excludes the use of synthetic inputs (such as fertilizers, pesticides, hormones, feed additives etc.) and the maximum extent feasible rely upon crop rotations, crop residues, animal manures, off-farm organic waste, mineral grade rock additives and biological system of nutriment mobilisation and plant protection” (Gold, 2007). Organic agriculture is based on minimize energy use, minimize pesticide residues, minimize water pollution, minimize total costs protect biodiversity, ecosystem services, soil quality, nutritional quality, employment of workers, yield etc. Even organic farming system produce lower yields compared with conventional agriculture they are more profitable and environmentally friendly and deliver equally or more nutritious foods that contain less (or no) pesticide residue, compared with conventional farming. Moreover, initial evidence indicates that organic agriculture systems deliver greater ecosystem services and social benefits. Significant barriers exist to adopting these systems, however, and a diversity of policy instruments will be required to facilitate their development and implementation (Reganold & Wachter, 2016). From the social movements rural sociologists can learn to look food in a new way, as something whose meaning and value is not exhausted by its nutritional content, its economic cost or the political agreements underpinning its production but which is, as Fiddes says (Fiddes, 1991), “part of our way of life” (Tovey, 1997). With the process of selecting our food which has been produced with different standards and different locations, in a vertical way we are reproducing particular social interactions and structures to not leave without weight the moral and cognitive ideas of process of production to every single farmer. Recently farmers try to sell their product directly to the consumers with higher price, not only because this process is more expensive in terms of price producing and time spending on it for the single farm. However, sometimes there is only one intermediary in between the consumer and the producer in other cases where there is more than one intermediary the costs can be very different. This process as mentioned before the Short Food Supply Chains (SFSCs) presents the



vantages and disadvantages in relationship with these two important actors (producer and consumer). Farmers who adopt organic farming aspires to produce food which is not only 'good to eat' but also 'good to think' (Beardsworth & Keil, 1992) - and in doing so, also to produce and construct a certain kind of society. So, farmers are a kind of social movement who guarantees food production systems and consumption habits and examine how the protection of environment is handled in all the societies, regulations, by state development agencies and by farmers.

## CONCLUSIONS

In this paper we emphasized the importance of studies in sociology of agriculture as part of sociology of organisation and economic process, sociology of work and about food production and consumption. In rural sociology the human dimension develops the argument of transformation towards the agriculture sustainability and requires social, economic and environment changes. Social movement and social learning of this group of society become relevant on promoting important decision making based on knowledge and adaption on human-technology-environment. All these transformations come out when farmers started to know that organic sector is driven to largely by high income earns than their conventional counterparts and attracted both to the perceived health and food safety attributes. The correlation between age of farmers applied organic farm and age of farmers applied conventional farm have retained a salience and currency in contemporary society in addition to having played a prominent role not only for farmers' lives but having an important role in the historical development of the Italian country. The economic issue in agriculture sector is present in different contexts and situations. Agriculture needs to attain higher sustainable levels of production, profitability and preservation of sale and quality food. Improving sustainable agriculture productivity in civil society with economic development path, means adequate farmer income while conserving the nature resources in such case sustainable water resource that agriculture productivity depends upon on it. In this matter farmers with their and agriculture product are the main actors for the progress on sustainable development with the purpose of making and realising more opportunity for the organic farming analysing all the 20th Italian regions.

From our work we can show the number of organic farmers is increasing in Italian regions focusing how local social contexts and networks are influencing the chooses of farmers related to the environment. Other results obtained from this article regarding the age of farming are shown. Improving sustainable agriculture in social society the group of farmers age from 35 to 65 are the most active in applying organic farming. This phenomenon happens not only for the simplified system on adoption and production but even for all the other constraints can encounter during the transformation and certification process and application on their own farm. The importance of local social context and the production together with the conservation of traditional food applying organic system is the main network and applied knowledge in a daily life behaviour of collective farmers. Altogether, it is clear to say that direct consumers and markets need to take into account possible organic agriculture scenarios and their effects on climatic change and environment. This scenario shows the weakness of organic farming that could be one of the diseases for the security of the production. The social and collaborative associated as NaturaSì and Slow Food in Italy in cases of bad season or natural disease reimburse the farmers the production from natural factors lost. Of course, this application and collaboration is strictly followed by the appertained authorities.

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