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## Drivers of on-farm diversification in the Italian peri-urban agriculture

During the last decade peri-urban agriculture has been deeply investigated not only from an economic perspective, but also for its important impact on land use as well as on environmental and social dynamics.

Building on the recent literature, the paper looks at the multifunctional role of peri-urban agriculture in Italy through a comparative analysis of a number of farms located within the main Italian urban poles. The analysis sheds light on both the internal and external drivers of farmers' decision-making process about income diversification towards multifunctional activities. The article shows that, in the post-productivist paradigm of multifunctional agriculture, peri-urban farms can play a pivotal role in a sustainable land use and enhancing the entrepreneurs' behaviour in providing a broad variety of social and economic services to the urban population.

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### 1. Introduction

This paper focuses on the main factors driving the process of diversification of peri-urban (PU) farms in Italy. The main objective is to explore to what extent the condition of peri-urbanity affects the income diversification of farms by looking at the factors that allow PU farmers to re-organise their enterprise by developing on-farm diversification strategies and new business oriented towards agricultural multifunctionality. Factors are divided into push and pull ones according to the direction they drive the change: diversification may be undertaken as an explicitly business and land use strategy, aimed at accumulation, when driven by "pull factors"; on the opposite side, farms may diversify as a reaction to "push factors", that drive risk or external shocks, seeking to escape from stagnation and decline (Meert *et al.*, 2005; Reardon *et al.*, 2006).

The analysis of income diversification and entrepreneurship in agriculture and rural areas is theoretically grounded into the post-productivist paradigm, which has gradually taken over productivism as the main body explaining the development of agriculture and rural areas in advanced economies. Post-productivism in agriculture moves around the concept of the multifunctional

role of agriculture, supplying new and different functions to society and also an innovative use of land, not necessarily devoted to the mere production of agricultural goods (Wilson, 2007, 2008; Salvioni *et al.*, 2013; Moragues-Faus *et al.*, 2013). As a consequence, rural areas and the agricultural sector become not just a production site, but also a consumption one, of private and public goods, services and gainful non-agricultural on-farm activities. The multifunctional role of agriculture requires a new generation of skilled entrepreneurs who are able to regroup the production factors within farms without necessarily pushing them outside the farm gate (Seuneke *et al.*, 2013). This process attracts new capital and more skilled non-agricultural labour force in the sector, in the farms and in the rural areas.

In this debate PU agricultural areas have been somehow neglected both by the rural development analysis and the urban studies (Torreggiani *et al.*, 2012). For the previous body of literature, those areas did not fully fit the conceptualisation of rural areas since they endured the influence of the urban models of production and consumption. At the same time, for the traditional development theory of urban areas and regionalisation, peri-urban agriculture was just a transitional phase of rural areas becoming available for urbanisation and the development of the metropolitan tissue. Indeed, while in the past PU agriculture was considered as a transitional status from rurality toward urbanisation, in recent years farming is increasingly viewed as an important component of the productive, environmental, social and landscape features of urban contexts. Urban and rural areas are increasingly integrated both physically and functionally, and because of their distinct and complementary endowments, closer integration can bring benefits to both (OECD, 2013). Multifunctional agriculture in the hinterlands of urban agglomerations can provide not only food to the urban dwellers, but also multiple goods and services demanded by the urban society (Van der Ploeg and Roep, 2003; Meert *et al.*, 2005; Zasada, 2011).

In this paper we present the case of the PU areas of Italy, focusing on two aspects: firstly, we ground the Italian case into the literature on rural entrepreneurship; secondly, we analyse the main drivers of diversification in peri-urban farms. In the final part of the paper, we refer to specific success cases of diversification, chosen among the main Italian urban poles. The Italian case of diversification in peri-urban areas is particularly interesting for many reasons. First of all, Italy has been a good observation point of many specific features of multifunctional and diversified agriculture and new forms of land use, given its natural and structural heterogeneity and as results of its significant ongoing structural change (Henke *et al.*, 2014; Dries *et al.*, 2012). Secondly, the intense urban development and the relative scarcity of land have made peri-urban agriculture particularly relevant not only for food provision but also for

the provision of multifunctional services (Grando *et al.*, 2014). Finally, Italy has been an interesting laboratory for the implementation of CAP policies, specifically for the one supporting on-farm income diversifications in rural areas (II pillar of the CAP) (Henke *et al.*, 2005).

This article attempts to fill in two gaps in the literature. The first is related to the analysis of PU agriculture by looking at the market-oriented and professional farms that operate in proximities of the cities, focusing as a consequence on the main drivers that can be connected somehow to the entrepreneurial aspects of peri-urban farming. Indeed, in the last few years an increasing attention has been given to PU agriculture, with the majority of studies focusing successfully on the cultural and social aspects, as well as on the governance of the rural-urban relationships (Marino, 2016; Blasi *et al.*, 2015; Cavallo *et al.* 2106; Fanfani, 2016). However, the integration of these analyses with the study of the entrepreneurial behaviour and the drivers of change occurring in professional farms<sup>1</sup>, within the so-called post-productivist paradigm, seem to be promising and worth further investigation.

Secondly, while the drivers for diversification have been largely studied in rural areas, in our view it is necessary to further assess which way the specific PU contexts, as well as the urban-rural interactions, may re-shape and influence these drivers, and to what extent the proximity to the cities may affect the behaviour of farmers in reshaping their land use and activities towards on-farm diversification.

The analysis shows that on-farm diversification can be stimulated by a complex set of push and pull factors, which are dependent not only on farmers' entrepreneurial skills and on their capacity to renew and redirect their activities, but also on the social and institutional contexts where they operate, the specific market dynamics and the policy support available.

The paper is organized in four steps, as follows. Section 2 sketches a background framework on diversification as a feature of post-productivism in agriculture and the evolution of agricultural and rural entrepreneurship in a developed context, including a short overview on the emerging literature on the multifunctional role of PU farming. Section 3 presents the methodology, while section 4 focuses on the presentation and discussion of the main results. Finally, in section 5 some conclusions are drawn.

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<sup>1</sup> Professional farms have stable and continuative market relationships, selling most part of their production. These definition cuts out hobby farms and those devoted primarily to self-consumption.

## 2. On-farm diversification and farm entrepreneurship

### 2.1 *The post-productivist paradigm framework in agriculture*

The traditional productivist paradigm dominating up till the 80s features the characteristic of agriculture in the large scale of production, the continuous substitution of human and natural capital with financial capital, a domination of monocropping and highly specialised farms, vertical integration in an industrially shaped mode of production (Marsden, 1995; Wilson, 2007; Henke and Salvioni, 2008). Productivism has progressively declined from the early 90s, opening the way to a bundle of conceptual discourses that are jointly labelled as “post-productivism” (Wilson, 2007, 2008; Moragues-Faus *et al.*, 2013; Fabiani, 2015; Sonnino and Marsden, 2006; Marsden, 2011; Henke and Salvioni, 2011). Post-productivism is not a paradigm conceptualised specifically for and in agriculture, but it has been comfortably adopted to it “to capture the crisis on agrarian policies and the incorporation of health, environmental and rural development concerns as well as the cost-price squeeze faced by farmers” (Moragues-Faus, 2013, p. 13).

Marsden’s work on the conceptualisation of post-productivism (1995) highlights how from the 80s a differentiation in their development patterns on rural areas has been launched, not following one single dominant model, thus implying the process of industrialisation and standardisation of agricultural production. In addition, rural areas start also to assume a new role, different from the pave of agricultural production, opening to residential use, hobby and tourism, and also to the provision of services for urban areas (Wilson, 2007; Anania and Tenuta, 2008; Alfano and Cersosimo, 2009).

Indeed, the post-productivist approach roots in a multifunctional role of agriculture. Conceived at the time of Agenda 2000 as a legitimisation of the public support to the European model of agriculture, multifunctionality has become the key to read a renovated role of agriculture and rural areas in the European and other developed contexts. The concept of multifunctionality has led to an increasing interest towards agricultural and rural incomes, as well as on structural change in agriculture and new forms of non-agricultural use of land within farms (Bowler *et al.*, 1996; Jongeneel *et al.*, 2008). Economic survival and occupation strategies have traditionally been the main drivers of diversification. However, other factors, such as ethical, professional and social motivations seem to gain momentum in the diversification rationale, as well as the generous financial support coming from the recent CAP (Henke and Salvioni, 2011; Dries *et al.*, 2012). In fact, the new direction of the agricultural and rural policies has enhanced the interest in on-farm non-agricultural activities, pushing further into the direction of income diversification.

In economic terms, in the advanced contexts there are new and growing functions of production in agriculture that lay along, and sometimes compete with, the main function of food production (Fabiani, 2015). However, according to the post-productivist paradigm the new function of agriculture does not wipe away the old one but integrates it. The primary sector roots deeper and deeper in the world agri-food system and in the international trade, however the multifunctional role of agriculture implies new activities, new subjects and a new role for rural areas.

## 2.2 *New farm entrepreneurship*

Many recent papers have dealt with the issue of how to define a “farm entrepreneur” and how to define and systematise the several activities developing on farm by “farm entrepreneurs” (de Wolf *et al.*, 2007; McElwee and Bosworth, 2010). This interest is most probably due to two reasons: one is the increasing on-farm diversification process which, in turn, is a consequence of the new multifunctional role assigned to agricultural and rural areas (Morgan *et al.* 2010; Wilson, 2008). The second is the attempt of policies to identify the “real farmers” and to grant most of the generous agricultural and rural financial support only to those who “play professional” in agriculture (McElwee, 2006; de Wolf *et al.*, 2007). The first point has been developed in the previous section. The second point deals with the search of a new justification of the public support by reaching new and targeted beneficiaries. The whole discussion of the “active farmers” in the latest CAP reforms, as well as the financial support granted to targeted groups such as young farmers or innovative farms, highlight the need to enhance new skills and entrepreneurships in agriculture, together with the identification of priorities in rural programmes which are highly connected to the diversification issue. The combination of these elements is not as easy as it might sound, just because the broadening of the on-farm activity generates a problem of definition of entrepreneurial skills within the farm, and also for setting the limits on what is farm-generated and what is not<sup>2</sup>.

A key contribution by the OECD (2009) proposes a taxonomy of diversification based on the allocation of production factors. On-farm diversification is, by definition, set up within the farm (differently from off-farm diversification, such as pluri-activity) while production factors (labour, land, capital) are

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<sup>2</sup> A very simple but useful example of this is a touristic facility in a farm where the farming activity is reduced only to a small share of the total: can the entrepreneur still be considered a farmer? Is he or she granted the same advantages any other “full farmer” enjoys, such as access to public support or fiscal support?

moved to activities that are “others” from the main farm activity (food and raw products). The more the production factors are diverted from the main production function, the more the farm becomes diversified. OECD classifies the diversification activities according to the main factor diverted: just to show some examples, in case of recreational forests the main factor is land (though not the only, of course), in case of subcontracting it is labour, in case of tourism is capital. These activities stem from a more traditional stream of on-farm activities (processing, sales) to more innovative and distant from the primary production (leisure, energy production, museums, and so on).

Diversification can be either a sort of “last effort” before the unavoidable abandonment of farming in small farms in constant crisis due to the long term declining trend of agricultural incomes, or a form of reaction to the highly specialisation process of productivistic agriculture (Morgan *et al.*, 2010; Henke *et al.*, 2015). If pluri-activity and part-time farming depend mostly from the external context, which is key for moving part of the family labour force out of the sector, diversification can happen for a variety of reasons that can go from non-entrepreneurial reasons like the residential use of farms or self-consumption, to proper entrepreneurial skills, such as educational farms, tourism, therapeutic uses, which in turn require also specific skills that enlarge labour opportunity in rural areas.

The literature dealing with the reasons behind farm diversification distinguishes among “pull” and “push” factors (Barret *et al.*, 2001; Hansson *et al.*, 2013; Henke and Salvioni, 2011; Reardon *et al.*, 2006; Ortiz-Miranda *et al.*, 2013). According to these works pull factors can be considered as *opportunity driven* factors: non-agricultural activities are started because the farmer has seen a business opportunity in them and wants to re-allocate existing resources to gain business growth. Examples of pull factors are the (higher) profitability of the diversification activities and the demand for new goods and services expressed by consumers. In this case diversification is undertaken as an explicitly business strategy and for accumulation objectives.

On the opposite end, push factors can be defined as *necessity driven* factors, including all the conditions that cause a pressure on farm due to external shocks, structural crises and the consequent decline of income. In this case the farmer has to diversify to manage risk, to cope with shock, to cope with surplus household labour and seasonality and, more in general, to secure family income.

In the next pages we will try to identify the drivers of PU agriculture and to what extent the condition of peri-urbanity may influence the types and the intensity of such drivers.

### 2.3 Peri-urban agriculture and multifunctionality

In recent years, farming is increasingly viewed as an important component of the productive, environmental, social and landscape features of urban contexts. Following a recent stream of literature, PU farms can be seen as progressively embodied in the metropolitan tissue, or adapted to the changes of the surrounding territory, or, finally, reacting and assuming new functions in PU contexts (Heimlich and Barnard, 1997; Zasada, 2011). In the literature these different behaviours have been classified according to three farms topologies: *traditional*, *adaptive* and *reactive* farms (Heimlich and Brooks, 1989; Pascucci, 2008). *Traditional farms* do not change their input allocation (included land) and product specialisation and are absorbed by the urban forwarding, becoming enclaves in the urban territory. As a consequence, labour and the other production factors are entirely kept in the agricultural activity, while diversification processes are set at a minimum, if not null level. *Adaptive farms* endure the urbanisation process adapting to it, mostly through deactivation and labour force transfer outside the farm gates. This process can affect both the farmer (part-time farmers) and the farmer's family members (pluri-activity) and it is mainly driven by the conditions of the non-agricultural labour market, so it is highly dependent from exogenous variables. Finally, *reactive farms* are particularly sensitive to the relationships with the urban context, modifying their specialisation and functions activated on-farm, and moving a substantial part of the production factors outside the traditional farming activities, in new on-farm businesses. For these farms, the diversification process becomes prevalent and, in some cases, can differ significantly from the main agricultural activity.

With regards to reactive farms, previous research has showed how the multifunctional role of agriculture adapts in a unique way in PU contexts, since diversification processes assume specific features as a consequence of the rural-urban reciprocal influences and the demand for specific issues required from city dwellers to farmers and rural population (Cavallo *et al.*, 2016; Grando *et al.*, 2014; Zasada, 2011; Yang *et al.*, 2010). Given the interaction with the urban contexts, new young and skilled entrepreneurs explore new forms of diversification producing goods and services of interest for the local population as well as for urban dwellers. The diversification process develops along two main parallel directions: the production of public goods and alternative land uses make the areas attractive for the citizens-consumers; this stimulates, consequently, the production of private goods creating new income for the entrepreneurs who decide to invest in the new business opportunity.

### 3. The analysis of diversification in Italy: background and methodology

The main *push and pull factors* affecting diversification in PU agriculture in Italy have been identified and analysed through a few cases of successful entrepreneurial approaches to diversification in professional farms. The selection of farms have been based on the results of previous studies which aimed at identifying the share and features of reactive farms out of the total PU farms for the main Italian urban poles (Giarè *et al.*, 2015a, 2015b; Henke and Vanni, 2014). These analyses, based on the micro-data of the 6th national Census of Agriculture (Istat, 2010), were concentrated on areas classified as urban and PU by the National Strategy Plan for Rural Development 2014-2020, then selecting the seven main urban poles in Italy, namely those with more than 500,000 inhabitants<sup>3</sup>.

In spite of the fact that number of cases selected to analyse the *push and pull factors* is very limited (7 farms, one for each urban pole), readers should keep in mind that this is a balanced and reasoned selection of successful reactive multifunctional farms located within such urban poles (a number that lays around the 10% of the total professional farms, which in turns are the 0.2% of the total Italian farms). In considerations of this, although we cannot consider them as “case studies” and infer from them on the universe of professional multifunctional peri-urban farms, the semi-structured interviews to the entrepreneurs can still help to better define the pull and push factors for this specific typology of farms. Given that, in this section we will draw some specific features for these farms, in order to look at the drivers of diversification in the Italian urban poles in the following section.

Italian agriculture is quite paradigmatic in terms of diversification, for the role of the sector on the economic and social development of the country, and also given the public support for agriculture and rural areas that have strongly influenced and modelled the diversification process (Anania and Tenuta, 2008; Alfano and Cersosimo, 2009; Henke, 2004; Aguglia *et al.*, 2008). The tied thread between urban areas, characterised by diffused and sparse local activities, and rural areas, in which non-agricultural activities have grown and developed, makes Italy particularly interesting in investigating the patterns of diversification on peri-urban agriculture.

The interviews were meant to explore possible development paths of reactive farms, in order to focus on the main pull and push factors that allow them to develop economic autonomy and, above all, to put in place successful diversification strategies as response to the pressures and constraints of a PU environment.

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<sup>3</sup> Torino, Genova, Milan, Monza e Brianza, Rome, Naples and Palermo.

The selection of farms was mainly based on the following criteria:

- *Location*: amongst the farms analysed through statistical data, the selection was made by prioritising those farms particularly close to the urban centres (less than 20 km), in order to better highlight the problems and opportunities provided by the urban context;
- *Reactivity*: selected farms have a high degree of “reactivity”, being professional and market-oriented farms with several diversification processes activated;
- *Short Chain*: priority was given to farms that have activated one or more forms of short chain (i.e., direct sales, box schemes, farmers’ markets, etc.), in order to explore the interaction between these market strategies and the determinants of diversification;
- *Farm features*: another important criterion for farms’ selection was the need of covering different characteristics in terms of farm specialization, size and diversification, in order to explore the determinants of diversification in different socio-economic and structural settings.

Once identified the seven reactive farms, the interviews were conducted locally at the farms venues, on the basis of a questionnaire with open-ended questions, keeping the possibility open to discuss related topics in the course of the interview<sup>4</sup>.

Unlike other studies on entrepreneurship and multifunctionality, focusing mainly on skills development and self-assessment made by farmers (i.e., Morgan *et al.*, 2010), our analysis lays mainly on the entrepreneurs’ perspective about the development path of their enterprise, highlighting their own perception of the main factors affecting the development of on-farm diversification activities.

#### 4. The drivers of diversification for peri-urban farms

The interviews with the peri-urban entrepreneurs have contributed to identify not only the main drivers and motives for farmers to diversify their business, but also their categorisation in push and pull factors. The identification and classification of the most relevant drivers have shed the light on the complex - and sometimes ambiguous - definition of push and pull factors, which for their nature are complex and context-dependent. Indeed, the data

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<sup>4</sup> The answers were firstly recorded and tape transcripts were organised by extracting statements that were considered particularly relevant in relation to the research objectives. These statements were then “coded”, namely divided in different groups and subgroups in order to identify and classify the main push and pull factors.

**Tab. 1.** Cases of successful diversification in Italian peri-urban farms in urban poles

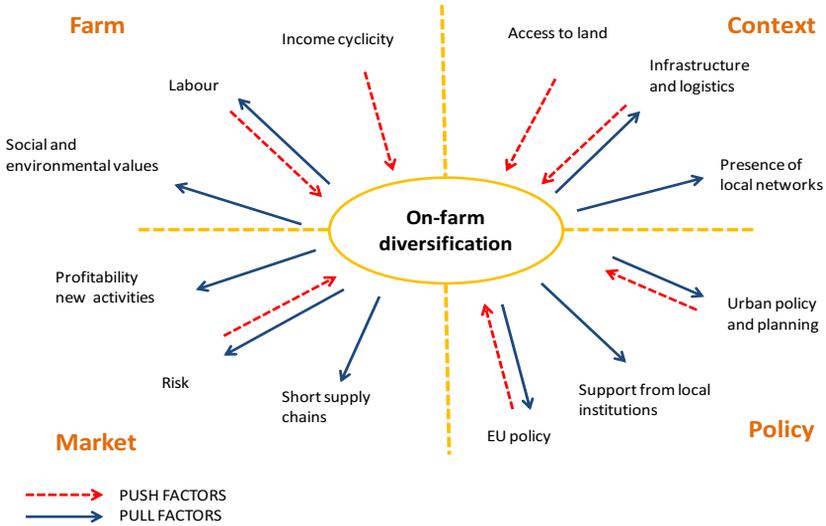
n.	Urban pole	Distance from the city center	Type of farm	Size	Specialisation	Main diversification strategy
1	Torino	20 km	Family farm	7 ha	Beekeeping	Social farming
2	Genova	15 km	Family farm	2 ha	Greenhouse horticulture	Processing (Pesto)
3	Milan	8 km	Company	150 ha	Mixed cereals (rice) and livestock	Educational farm
4	Monza-Brianza	19 km	Family farm	5 ha	Horticulture	Box schemes
5	Rome	10 km	Social cooperative	15 ha	Horticulture (organic)	Social farming
6	Naples	13 km	Limited company	16 ha	Viticulture (Integrated)	Agritourism
7	Palermo	18 km	Family farm	2.5 ha	Beekeeping	Educational farm

collected confirm the results of the literature on determinants for diversification (McNally, 2001; Hansson *et al.*, 2013, Meert *et al.*, 2005): there are several factors influencing farmers' behaviours that go well beyond economic aspects and that are strongly interlinked between them. As result of their interaction and of the farm context, such factors can act either as opportunity-driven factors (pull) or necessity-driven factors (push).

What distinguishes our results from the literature is the specific focus on the factors characterising PU farms (i.e., urban policy and planning, proximity to the consumers, infrastructures). In addition, the factors that were already identified in the literature in many cases presented different connotations and they seem to be strengthened by the condition of peri-urbanity (i.e., access to land, short supply chain, profitability of new activities). The proximity to urban centres may affect to a large extent the farmers choices regarding on-farm diversification and, in some circumstances, may increase the intensity of the related push and pull factors.

On the basis of the data coding process, push and pull factors identified through the case studies have been classified according to four main dimensions: (i) external physical socio-economic context where farms operate; (ii) farm characteristics, which are related both to the structural and economic feature of farms but also to the entrepreneurial skills of farmers; (iii) market drivers and (iv) policies (Fig. 1).

Fig. 1. The drivers for diversification in peri-urban agriculture



#### 4.1 External context

Amongst the external drivers affecting the farmers' decision to diversify, a key factor is the context where farms operate (Torreggiani *et al.*, 2012; Bartolini *et al.*, 2014). In our analysis we refer to the external context in a broad sense, by including not only the physical assets available (land, water, roads and other infrastructures), but also the presence of institutional and social networks (local institutions, NGOs, civil society organisations, consumers' groups) as important drivers affecting the farmers' behaviour, which may stimulate or hinder on-farm diversification.

Amongst the physical assets available for PU farms, the majority of entrepreneurs interviewed acknowledged the availability of land as a key push factor. Indeed, while the problem of land fragmentation and the access to productive land is an issue also affecting the farms located in rural areas, it is evident that conflicts amongst different land uses are exacerbated in PU areas, where land prices are generally higher and, above all, the availability of land is strongly linked to the ongoing urbanisation process and on the possibilities to convert agricultural land into other land uses. The uncertainty about the future availability of land, especially for farms specialised in types of production such as livestock and arable crops, may push farmers to re-orient their pro-

duction and, in many cases, may also stimulate the development of on-farm diversification activities such as agri-tourism, educational and social farming. Indeed, amongst the peri-urban farms analysed, there are several cases where, even though the availability of land was considered as a crucial limiting factor, it did stimulate the reactivity of peri-urban farms, by pushing them re-orienting or broadening their activities.

From this perspective one of the most evident cases is the PU farm in Torino (n. 1), a farm historically specialised in beef production that has been partially converted in an honey bee farm, since this specialisation seemed the most suitable response to the problems of land fragmentation. As pointed out by the farmer: *“our choice of becoming an honey bee farm allowed our farm to take advantage of land fragmentation, since the availability of different parcels in different areas with different soils and natural vegetation favoured the production of different types of honey ...”*.

Another interesting example is the PU farm in Genova (n. 2), which has dealt with the problem of the land availability by developing an high specialised greenhouse cultivation of basil, where the added value of the agricultural production was largely increased by the investment in the intensification of production, as well as on the processing and marketing of pesto sauce.

The interviewed entrepreneurs emphasised the peculiarities of land markets in urban and PU contexts, where the higher prices are usually accompanied by a fragmented and complex pattern of ownership and property rights, with small parcels of agricultural land available to rent, often with short-term contracts. These issues have been strongly emphasised by the entrepreneur in Palermo (n. 7), who recognised the low availability of agricultural land in his municipality as the main push factor for his business. This was a limiting factor also for the main on-farm diversification activity, since the small size of his holding prevented him from obtaining the official certification as educational farm<sup>5</sup>.

The case of the large PU farm in Milan (n. 3), on the opposite, sheds light on one of the main pull factors for diversification deriving from the external context, namely the presence of well-established connections with local institutions and organisations. In this case these connections were considered as strategic factors to develop new business strategies that go beyond the food production<sup>6</sup>. The farm has become one of the most known educational farms

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<sup>5</sup> According to the regional regulation in Sicily educational farms must have at least 15 hectares of agricultural land.

<sup>6</sup> These connections were favoured by the fact that the farm is located in the Milan South Agricultural Park: the farm could become a Park information point and it was involved in the Milan Agricultural District (Consortium DAM), a local network established to promote

around Milan also as result of the agreement with the education department of the municipality to host school visits and summer schools. Similarly, other PU farmers that have developed educational and social farming in other cities (i.e., n. 1, 5 and 7) highlighted how the presence of local institutional networks is a crucial pull factor in stimulating on farm diversification.

Finally, the large availability of infrastructures (roads, facilities, transports, retailers, etc.) which usually characterise the external context of peri-urban farms was interpreted as push or pull factor depending on the specific situation: while some farmers recognise it as a strategic (pull) factor for diversification (n. 3, 4 and 7), others consider it as limiting (push) factor, due to negative environmental and landscape effects (i.e., n. 6) as well as for problem of noise pollution (n. 2).

#### 4.2 Farm characteristics

The determinants of diversification strategies at the farm level have been largely studied in agricultural economics (Bartolini *et al.*, 2014; Salvioni *et al.*, 2013; Vik and Mcelwee, 2011), and the main factors identified in the literature are, amongst others, reduction of risk of agricultural activities; increase in returns of productive factors through additional income sources; keeping household labour on farm; individual aspirations, motivations and attitudes. These factors are usually combined within the same farm and the specific combinations are determined by farm characteristics – such as size, specialisation and location – as well as by the diversification activity to be developed.

Similarly, the case studies analysed here show how the choice of the entrepreneurs to settle a diversified and multifunctional farm is largely affected by some structural conditions, such as size, specialisation and availability of labour, which may act as pull or push factors according to the specific conditions. The problem of income cyclicality and the need of diversifying income sources to deal with market instability were recognised as the most relevant push factors, especially for the largest and most structured peri-urban farms (n. 2, 3 and 6). Instead, labour was identified as both a pull and push factor. While the availability of family labour was interpreted as an important opportunity (pull) for the smaller family farms (n. 2 and 7), the necessity of employing family members and other workers in additional activities were recognised as important push factors by the largest farms oriented to agri-tourism and educational farms (n. 3, 5, 6).

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several initiatives to support agriculture in the Milan area such as workshops, conferences and events that deal with the issues related to urban agriculture, sustainable tourism, farming culture.

Anyway, for the farms analysed, the composition of pull and push factors for diversification seemed strongly linked with the overall history of the farm, since the decision of becoming a multifunctional farm usually went together with the choice of keeping or developing the farming activities. With regards to this, the most evident case is the PU farm in Rome (n. 5), which was born as a social cooperative but several factors strongly linked to the PU context (mainly the recognition of the social and environmental role of this cooperative by local population, the availability of different types of labour and skills amongst the members) pushed members of the cooperative to transform it into a multifunctional farm.

Furthermore, it is interesting to notice that the farmers interviewed recognised that their background, skills and attitudes are strongly linked to the urban context and how this was as an important pull factor to develop diversification activities that need specific entrepreneurial skills. This was particularly evident not only for the social cooperative in Rome, but also for the PU farm in Genova (n. 2) and in Naples (n. 6), where the market strategies as well as the main diversification activities seemed strongly linked to the farmers' background. In the case of Genova the farmer comes from the commercial sector and this was recognised as a relevant factor in re-orienting this farm to processed products but also in successfully managing investments, innovation and commercial relations. Similarly, the farmer in Naples has an extensive experience in the building sector and when he decided to settle a PU farm the investments in facilities and infrastructures for agri-tourism were strongly facilitated by the skills and capabilities acquired in his previous employment.

Finally, another important factor recognised by all farmers is related to the personal motivation and attitudes towards multifunctionality, as well as ethical reasons (related especially to social public goods). While the personal commitment and values towards the social and environmental role of farming are also relevant in rural areas, according to the interviewed farmers the closer relation with the final consumers, as well as the broader networks of institutes, organisations and events that characterise urban areas, are relevant pull factors that influence to a large extent peri-urban farmers' motivations and attitude towards multifunctionality.

### *4.3 Market relationships*

The selected farms show a broad range of market relationships of PU farming along the supply chain, which can be based on local or distant markets or even on a combination of both (Marino, 2016). Although all the market strategies involve some form of direct on-farm sale (or other forms of short sup-

ply chains such as farmer markets, box scheme, solidarity purchase group and public procurement), the role of short supply chains assumes different connotations, which may be grouped in three main strategies: (i) strongly oriented to short chains; (ii) strategically oriented to short chain and (iii) slightly oriented to short chains. In this context it is interesting to see in which way, for these different categories, the short supply chain strategies interact with the drivers for diversification.

With regards to the first group, the main (pull) factors of the farms that commercialise their products almost exclusively through short chains (n. 1, 4, 5 and 7) are largely the same that pull in favour of diversification itself: personal motivations and attitudes of the farmers and their willingness to promote alternative ways of producing and commercialising food, with a commitment towards social and environmental sustainability. It is interesting to note here the strong connections and synergies amongst the short supply chain initiatives and the on-farm diversification strategies. In these cases the direct involvement into local projects related to the social or environmental dimension of farming, as well as direct connections with local consumers, favoured a business strategy highly oriented to local markets, where the marketing of food is strongly linked with the on-farm diversification activities. For these farms it is almost impossible to distinguish the pull factors for short supply chains and the ones affecting on-farm diversification, since they reinforce each other. To give an example, the activities of these farms are so embedded in the local metropolitan context that in some cases they produce organic food with no need of official certifications, relying on the trust and direct knowledge of local communities.

The relation between on-farm diversification and short supply chains are also relevant for the second typology of farms (n. 3 and 6). The commercialisation in these farms is based on links amongst local and distant markets, where the most relevant share of production is commercialised through conventional markets, but several forms of direct selling were activated and were fully integrated with the diversification strategies. The case study n. 3 in Milan is quite significant on this matter, since the majority of rice produced by this farm is commercialised through big retailers and processors, while a small share of production is processed by a local firm and sold in the on-farm shop. In this case the pull factors for diversification, namely the proximity of the city and the presence of the agricultural park, favoured this form of direct selling, and the farm shop also became a commercialisation opportunity for farms from the local area which are not located so close to the city and that commercialise part of their products at this shop. This type of collaboration between PU farms and other farms is not an isolated case, and can be considered a strong pull factor for PU farms for developing some forms of short

chains but also to enlarge and diversify their activities (es. agri-tourism and catering). Another interesting example of the strategically use of short chains is the case n. 6 in Naples, where the production of certified PDO (DOC) wine sold on-farm (farm shop and agri-tourism) was used as advertising to increase the commercialisation in the local restaurants and food shops. As pointed out by the farmer: *“although the quantity of wine commercialised in our shop and in the agri-tourism is limited compared to the total turnover, it is a strategic solution, since it is an important promotional tool which allows us to transform occasional clients in faithful customers and this help to expand our networks of local shops and restaurants that commercialise our wine”*. While for these farms the use of short supply chains is still relevant, the case of Genova (n. 2) is a significant case of the third typology, showing how PU farms can be strongly integrated with conventional chains and distant markets. The products of this farm, namely the fully on-farm processed pesto sauce is mainly commercialised through big retailers, while the direct selling is perceived by the farm as a “symbolic and social choice”, which in some ways gives an added value to the initiatives as educational farm.

#### 4.4 Policy role

Several studies show that, even in peri-urban areas, policy regulations play a very relevant role in stimulating farmers to shift towards multifunctional strategies (Heimlich and Barnard, 1997; Vandermeulen *et al.*, 2006). During the interviews with PU farmers in Italy we investigated their perceptions on the EU and regional policies, but also on the local instruments that have the potential to stimulate multifunctionality. Indeed, it is increasingly evident that, together with European policies – especially the CAP – also local policies have an important impact on the uptake of diversification and multifunctionality (Vandermeulen *et al.*, 2006).

What is relevant for this research is to explore whether the policies act directly as pull factors or, indirectly, by stimulating other positive drivers. To some extent, well-targeted and effective policies should also contribute to remove the main push factors or transform them in positive drivers or pull factors. Although an assessment of the complex mix of policies that affect peri-urban areas goes well beyond the scope of this paper, the case studies could provide some insights on the differentiated perceptions of farmers on policy role.

According to the entrepreneurs interviewed, policies can be generally considered an important pull factor, but in several cases it seems that their potential is not completely expressed and, in some circumstances, they can also be considered as a push factor.

The main limitations related to the EU policies, especially rural development programmes (RDPs), acknowledged by farmers were their complexity, the lack of flexibility and the administrative burdens. For these reasons some farmers decided to apply only for the direct payments of the CAP and developed their diversification activities without any support from the rural development policies. However, three farmers (n. 2, 6 and 7) considered the rural development policy not only as one of the main drivers for diversifying their farm, but also an important pull factor that allowed to settle their business. For instance for the farm in Genova (n. 2), the 'setting up young farmers' measure of the regional RDP has been a crucial support for continuing the agricultural activity traditionally carried out by his family. In addition, the setting and enlargement of infrastructures such as greenhouses and the processing laboratory were co-financed by the RDP (though the measure 'Adding value to agricultural and forestry products'), which allowed the young farmer to expand his production and, above all, to develop a diversification strategy based on food processing. The role of RDP policy was emphasised even more by the entrepreneur in Naples (n. 6), who considered the availability of RDP measures for 'diversification into non-agricultural activities' and 'encouragement of tourism activities' as pre-requisites to settle a multifunctional farm oriented towards agri-tourism, catering and reception. At the same time, this farmer complained about the lack of integration of these EU policies with the local strategies, by emphasising the lack of support by the local institutions in setting the conditions to stimulate activities such as agri-tourism and renewable energies. Indeed, even though local policy actors have different instruments at their disposal to stimulate multifunctional farming systems, the lack of a tailored combination between European and local instruments was acknowledged by the farmers as one of the main limitation of the policy support currently in place.

From this perspective a relevant example regards the conflicts over land use, where the agri-environmental support ensured by the CAP should be harmonised with the land use planning strategies adopted by municipalities. As pointed out by several farmers, a local planning strategy based on the objective of preserving agricultural land within and around the city in many case is an essential factor to maintain competitive and professional PU farms.

## **5. Conclusions**

The recent literature on the agriculture and rural development in advanced economies highlights the role of PU agriculture as the place where the discourse about multifunctional agriculture and income diversification assumes

specific features and becomes real and visible: PU farms provide not only food for the near cities, but also public goods and social services that make them attractive to urban population, often reinventing the use of farm land for non-agricultural purposes. As a consequence, PU agricultural areas evolve as places of consumption and become attractive as residential alternatives, sites of non-agricultural activities, hobby farming and so on, assuming new roles and functions in the contemporary society. Income diversification and multifunctional agriculture deconstruct the rigid theoretical support of productivism and lay on the rather opposed concept that specialised and diversified farms coexist and respond to different but complementary societal demands.

The case studies analysed in this paper highlight how the adoption of on-farm diversification strategies in PU contexts is not synonymous of marginal or declining agriculture; on the contrary, it can be interpreted as a specific business strategy developed by the most structured and market-oriented farms, which re-allocate the production factors in order to diversify (and to increase) income sources. The diversification process activated on-farm requires a selection process of more skilled labour force and entrepreneurial capacities that represent a drive of change in agricultural and rural contexts, increasing the opportunities of the supply of private and public goods to meet the demand expressed by the contemporary society in the advanced regions of the world. This element of growth and development is particularly relevant in the PU areas if we consider that the definition of urban poles in the planning of the Rural Development policies of the EU has aimed, so far, basically to their exclusion from the set of beneficiaries of the financial support.

Somehow, one could maintain that are specifically these areas that qualify better than others for a specific support enhancing the multifunctional role of agriculture. Indeed, the idea underlying the paradigm of post-productivism of the coexistence of multiple models of agriculture development makes PU areas particularly sensitive to the matter of multifunctionality and services provided for the cities that grow round and next to them. What we have identified as the reactive PU farms has the potential to turn push factors into pull factors, or at least to count on the later ones in order to grow and diversify. Policies, on the other hands, can work on traditional and adaptive PU farms in order to make them towards a more reactive behaviour and follow the model of the most innovative PU farms. It has been a positive decision, then, that of extending EU Rural Development financial support to the PU farms, since it is necessary to improve on-farm diversification activities of the most reactive PU farms. The main reason is because in highly urbanized environments, a proactive and innovative PU agriculture could be a relevant strategy to enhance the resilience of metropolitan areas and, more in general, to improve the connections between urban and rural areas.

With regards to this, it should be noticed that the qualitative analysis carried out through the case studies was not deemed to provide an exhaustive overview of the specific features of the different PU conditions in Italy, but rather to investigate patterns of development and entrepreneurial behaviours that are a response to the decline of the productivistic paradigm and the insurgence of a new paradigm. This new paradigm does not imply one single mode of production but rather co-existing ones, each responding to a specific segment of the demand coming from society towards agriculture. This approach is consistent with the explorative nature of the study, but also with the goal of understanding both pull and push factors involved in developing on-farm diversification in PU areas and, above all, to explore how the most reactive entrepreneurs may re-configure their business to provide new goods and services demanded by the local populations. This analysis shows that farms' reactivity can be stimulated by a complex set of push and pull factors, which are strongly dependent on farmers' entrepreneurial skills and on their capacity to renew and redirect their activities towards multifunctionality, but also to the social and institutional contexts where they operate. In this stream, an interesting body of research could come from a more comprehensive analysis of the constraints, the potentials and the opportunities of PU farming in different countries, also by widening the number of case studies and farm typologies.

Finally, the four dimensions we investigated are strongly connected to each other and it is very hard to see where the influence of one stops in favour of another one (Vanni, 2014). More research needs to be carried out into this direction, investigating the links and the leakages of the dimensions of drivers here defined. It is an interesting consolidated body of literature and European research in investing in studies of relational and institutional links supporting diversification, multifunctionality and local entrepreneurial development (see, among others, the international network of researchers on "agriculture in a urbanizing society"). While multifunctionality of peri-urban agriculture is increasingly recognised as a successful reaction to the urban pressures, further research should address more extensively the highly interconnected entrepreneurial, social and institutional drivers of on-farm diversification. With regards to this, key elements for future research are inside the agriculture sector, such as the issue of generation renewal, the development of new skills and the access to specific policies, as well as outside it: regional planning, competition in the use of land, institutional building and non-agricultural labour market. To this end, a multidisciplinary approach is not only desirable but probably necessary.

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