

## RELATIONSHIPS BETWEEN AGRITOURISM AND CERTIFIED QUALITY FOOD IN ITALIAN RURAL AREAS<sup>1</sup>

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**ABSTRACT** – Since the early 1960, farms are one of the alternatively forms of hospitality in few Italian regions located predominately in the north and in the centre of peninsula. In 1985, Italian government promulgated a law in order to regulate this non-conventional form of tourism, by delegating to the regions the direct management of administrative procedures and inspections in farms. Nowadays, Italian agritourist farms represent a good chance to give value in favour of farm by the diversification of agrarian activities and also by holistically promoting local food in a direct connection to local gastronomy, rural heritage and tradition, with positive effects on the endogenous development in rural areas. The aim of the paper was to assess the role of agritourism in raising the socio-economic development of rural space by the diffusion of certified quality food using a quantitative approach and to assess if agritourist and certified quality food were tools able to implement the living conditions in the countryside. The findings have disclosed that tourists from abroad have increased the level of farmer income giving value towards high quality food and farm holidays farms. Instead, the impact of Italian agritourists has been relatively poor because of the economic crisis.

**Keywords:** rural territories, certified quality food, rural districts, self-organising maps, multiple regression models

### INTRODUCTION

After the end of the World War II and until the late 1990s, Italian rural areas had a sharp decline both in terms of labour force and in terms of resident population. Rural people preferred to migrate towards urban areas, able to offer the best opportunities for socio-economic growth, with the consequence of causing the marginalization of the Italian countryside (Galluzzo, 2014). In order to stem this out-migration from the rural space, the European Union sought to put into action lots of specific interventions aimed at stimulating an economic and social regeneration of rural areas. In fact, since 2000, as a consequence of some proposals come up during the Cork Conference on rural development in 1996, European and local authorities have been taken into consideration in their National and Regional Rural Development Plans the role of farmers in protecting the environment by multifunctionality. The European Union has given to the farmers a role of dweller in favour of rural areas able to preserve them against environmental issues.

However, in the early 1990s, as a consequence of the transition from a productivist agricultural model to the post-productivist one (Ilbery, 1998), the European Union already focused its efforts to change the paradigm of European agricultural production. The aim was to restrict overproductions of agrarian commodities (Vieri, 2012) and to promote pluriactivity in the primary sector by a new diversified model of rural tourism, a pivotal pillar both for a strong multifunctionality in the primary sector (Wilson, 2008) and also for the diversification of agricultural productions (van der Ploeg et al., 2000; Allaert et al., 2006; Van Huylenbroek et al., 2007; Renting et al., 2008).

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### **THEORETICAL FRAMEWORK OF AGRITOURISM**

Agritourism is a type of tourism that can integrate itself with the countryside model of living and, at the same time, it is able to be sustainable with natural and cultural features, craftsman-like activities and environmental peculiarities of rural areas (Sivini, 2013) and it is also able to satisfy specific needs, mostly coming from foreign tourist markets (Ohe and Ciani, 2012). Anyway, in literature, it is not common to define a unique concept and definition of agritourism, which is as a niche part of the rural tourism as a whole (Sznajder et al., 2009). Agritourism is a part of the theoretical framework of the integrated rural tourism, able to create a strong network among all the stakeholders and entrepreneurs in the countryside (Saxena and Ilbery, 2008), even if quantitative studies in the US and in Germany have pointed out that some factors such as age of farmers, skills and competence of entrepreneurs and distance from the city or urban areas are pivotal variables in the level of farmer's participation and characteristics in agritourist farms (Bagi and Reeder, 2012; Sidali et al., 2007).

It is important to stress that agritourism and the specialization in agri-food and quality food productions, typical of rural areas, can be classified as broadening and deepening farm activities from the perspective of sustainable rural development (van der Ploeg et al., 2002; Milone and Ventura, 2012). All this puts multifunctional and pluriactive farms in a theoretical framework, easily identified and distinguishable by endogenous multi-level and multi-disciplinary characteristics (van der Ploeg, 2006), stimulating the growth of a new paradigm of rural areas based on farm and on the production of certified quality products (Galluzzo, 2008a). This last aspect has had an impact on the specialization of Italian rural areas (INEA, 2000; INEA, 2008) and on the landscape (Sereni, 1985), enabling the diffusion and development of rural districts able to enhance the production of certified quality food and assigning towards pluriactive farms the pivotal and useful role in the achievement of multifunctionality (Galluzzo, 2012). However, in other European contexts the dual relationship between rural tourism and rural development in lagged behind rural areas does not seem to have the eagerly awaited effect (Ribeiro and Marques, 2002). Alternative agri-food networks, namely the direct sale of food, agricultural products and certified quality food should play an important role in rural development process by multifunctional farms (Nazzaro and Marotta, 2012).

Rural tourism has the ability to allow a local development of small businesses units and edge activities in less favoured areas strongly dependent on natural resources and on the asset of tangible and intangible values rooted in it, able to act like a force in favour of the community development in disadvantaged European rural areas (Hegarty and Przeborska, 2005). In some Italian regions, the positive impact of agritourism and rural tourism has been the growth of a meaningful specialization in hospitality, specifically in territories characterized by a tourist connotation such as Tuscany and Umbria implementing a network of relationships among stakeholders, which is a central factor in enhancing local cultural systems and agricultural productions (Contini et al., 2009).

Agritourism is focused on this last aspect and it is also the main part of a framework of overall improvement of living conditions in rural areas, through a greater diversification in agricultural productions and in the capital that is invested in it. Hence, agritourism and certified quality food are the first and foremost pillars in generating a positive impact on the environment and also on the socio-economic development of rural areas in terms of implementation of rural tradition assets in rural territories (Sonnino, 2004). The useful consequence is to generate rural districts of quality with regional or inter-regional dimensions such as in Tuscany-Umbria and in other few northern Italian regions. In contrast, there is not always a willingness of some stakeholders, downstream of the rural chain, to appreciate the allocation of financial supports towards farmers. Financial subsidies are a fair but not an adequate economic tool of compensation in favour of the irreplaceable role of multifunctionality in rural areas and towards the environmental protection, which requires an implementation of a specific governance to rural territories (Renting et al., 2005).

The agri-food products associated with gastronomic traditions and with farm holidays farms, with regard both to their use within the farm and to their spatial location in terms of enhancement of the inner upland less favoured areas and their own vocation-productive specialization, are an element of development in these rural territories. Hence, they have also a pivotal aspect in favour of the rural

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tourism useful in order to bring about a local identity, useful in ensuring the development of rural areas with specific actions tailored in favour of rural territories (Bessièrè, 2002), able to endow rural territories of a distinct and significant endowment of social and human capital as well. The development of network strategies related to a shareable knowledge by all local stakeholders has improved the level of involvement of rural communities in their endogenous rural planning process. An integrated rural network strategy is also able to ensure a socio-economic growth of rural territories by means of the utilization of their gastronomic peculiarities such as regional foods (Tregear et al., 2007). Prestigious quality foods internationally recognized have set up a specific image in the consumer's mind linking the food to the place. A high level of social capital associated to an interactive social and cultural capital in many Italian rural areas has strengthened the socio-economic rural fabric (Brunori and Rossi, 2007) which is the crucial factor to generate agri-food districts and high quality rural districts as well (Galluzzo, 2008b; Galluzzo, 2009; Galluzzo, 2010).

### **AIM OF THE PAPER**

In the last thirty years, agritourism has been a patchwork in the framework of the rediscovery of the countryside and its specific rural experience, in connection with a rediscovery of local products and gastronomy. The consequence is a direct effect of integration of agritourism with many holistic activities such as wine tourism movement and routes of agricultural products aimed at rediscovering and tasting typical agricultural products (Santucci, 2013). Starting from the research published by Santucci in 2013, this paper has not taken into account different types of Italian agritourism, depending on the landscape and agricultural specialization. It is focused only on the role of functional agritourism farms of Italian certified quality food in increasing the value of different and diversified farmer activities and their own farmers' income.

In general, the mentality of the urban population identifies agritourism as an element able to generate an image of rural idyll in remote areas and reshape rural areas as a good example of well-being and good life (Figueredo and Scrape, 2011) that resists against the daily frenzy and stress of modern society. The latter aspect, in fact, is seen as an element able to humanise the space engulfing rural areas and the production of certified quality food in contrast to standardized food that is not rooted in traditional rural areas.

However, remote rural areas are not able to identify their self in terms of elements tightly linked to agritourism and certified quality food to generate a rural idyll because, according to other conclusions drawn by authors such Figueredo and Scrape (2011), tourism in rural areas is not a panacea to solve immediately and permanently many development issues in rural space. Agritourism is, instead, a plug in the rural mosaic aimed at setting off tangible and intangible assets among agricultural productions, retailers and other stakeholders. People in urban areas are seeking rural idyll in order to appreciate unique and intrinsic values that agritourism and food may produce such as heritage, leisure and uniqueness of landscape in the countryside.

Agritourism and certified quality food have been able to ensure a rural viability of Italian farms in terms of multifunctionality that characterizes the Italian productive agricultural fabric based on family unit of production tightly dependent on other sources of out income through farm diversification (Renting et al., 2008). Both the broadening and the deepening (Van der Ploeg et al., 2002) have in certified quality productions and in agritourism two useful pillars for the development of farms which can draw 4% of the total net added value produced in the primary sector in Europe (Knickel et al., 2004).

To sum up, the first and foremost aim of this paper is to investigate in a quantitative approach the role that certified quality food and typology of recreational services in Italian agritourism have had on the development of farm holidays farms. Furthermore, another purpose was to assess whether the growth of Italian agritourism is correlated with the level of added value and Gross Domestic Product (GDP) produced in different Italian rural regions. The research question in this latter case is: Are Italian rural areas positively influenced in economic terms by the growth of agritourism?

## METHODOLOGY

In order to assess the relationships between certified quality food and agritourism, we used a quantitative approach. This latter method was useful to investigate also the impact of high quality food and farm holidays farms on rural development in all Italian regions over a nine-year period (2003-2011).

The first stage of the quantitative research used a multiple regression model in order to estimate the first and foremost linkages among agritourism, certified quality food and presence of Italian and foreign tourists in farm holidays farms.

The further phase of the quantitative analysis used the Self-Organising Maps (SOM) proposed by Kohonen aimed at assessing the evolution of agritourism in all Italian regions and specifically at estimating the impact of different socio-economic variables in influencing its growth over the time.

The parameters or regressors in the multiple regression models were estimated by the Ordinary Least Square using the open source software GRET 1.8.6. In its algebraic form of matrix, the multiple regression models can be expressed as follows (Verbeek, 2006):

$$\mathbf{y}=\mathbf{X}\beta+\varepsilon \quad (1)$$

where  $\mathbf{y}$  is a dependent variable and  $\varepsilon$  is the error, but both are vectors with  $n$ -dimensions,  $\mathbf{X}$  is an independent variable which has dimension  $n \times k$ .

In analytical terms, the model of multiple regression, in its general formulation, can be written in this way (Asteriou and Hall, 2011; Baltagi, 2011):

$$y=\alpha_0 +\alpha x_1+\beta x_2 +\gamma x_3 +\delta x_4+\varepsilon_{jt} \quad (2)$$

$y$  is the dependent variable

$\alpha_0$  constant term

$x_1, x_2, x_3, x_4$  independent variables in the model

$\alpha, \beta, \gamma, \delta$  estimated indicators or parameters of the model

$\varepsilon_{jt}$  term of statistic error.

The basic assumptions of the multiple regression model are:

statistic error  $u_i$  has conditional average zero that is  $E(u_i|X_i) = 0$ ;

$(X_i, Y_i), i = 1...n$  are extracted as distributed independently and identically from their combined distribution;

$X_i, u_i$  have no fourth moment equal to zero.

This implies that there is no correlation between regressors and random noise, hence, the value between  $\beta$  expected and  $\beta$  estimated is the same. To analyze if there is heteroscedasticity on standard errors, the White's Test on error terms was used.

The self-organizing map (SOM) proposed by Teuvo Kohonen is a case of information processing organization which can involve different aspects, a model similar to neural networks pivotal elements in biology, utilized in favour of artificial neural networks (Kohonen, 1995). The SOM is based on a method of unsupervised learning in a space with a limited size and where the topological properties of input space or stimulus come from the outside (Kohonen, 2001).

The self-organizing map is a neural network with output neurons arranged in some grids based on a lower dimension where each input or stimulus is connected to the other neurons part of the output with a consequential response (Pessa, 2004). Hence, each neuron is associated to a weight vector having the same size of input vectors. The size of the input vector is generally overabundant and thus it appears to be much larger than the size of the final grid. The weights assigned to the neurons are initialized as either random numbers or small values sampled uniformly from a subspace crossed by the two wider eigenvectors main components in such a way that initial weights are a good approximation of the weights in the SOM (Kohonen, 2001).

In this paper, using the free software SPICE-SOM, the training process to estimate the SOMs has utilized the competitive learning approach in order to assess the Euclidean distance of a training

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sample from a network calculated from all weight vectors (Kasky and Kohonen, 1996). The neuron with weight vector most similar to the input is called the Best Matching Unit (BMU) and the weights of the BMUs and neurons close to it in the SOM lattice are the closest to the input vector. The intensity of the approach process declines over time and it depends on the distance of neurons from the Best Matching Unit (Kohonen, 2001).

**MAIN RESULTS AND DISCUSSION**

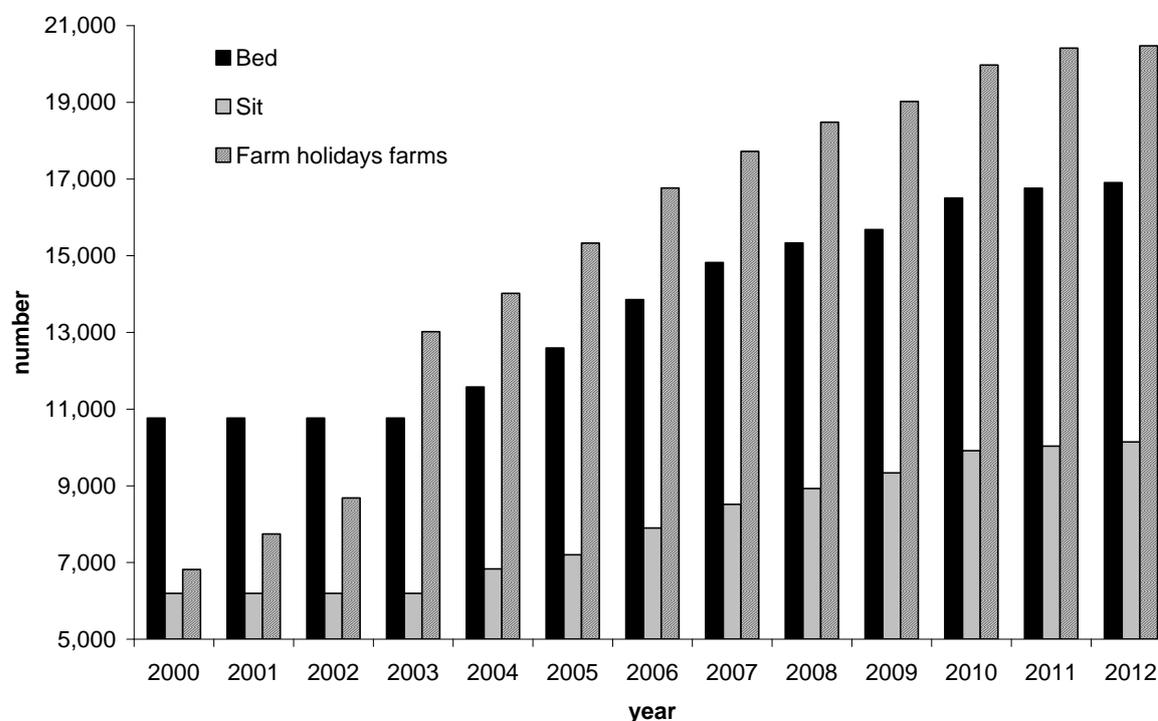
In Italy since the 1990s, there has been a significant growth of agritourism which has been influenced in a direct and statistically significant way by financial supports allocated by the second pillar of the European Common Agricultural Policy in specific actions provided in National and Regional Rural Development Plans (RDP).

**Table 1.** *Main relationships between financial supports allocated by Italian Rural Development Plan and different activities in agritourism*

Variable combination	Correlation
Agritourism and RDP allocated funds	0.99***
Agritourism growth and specific measures of RDP allocated funds	0.55**
Agritourism growth and RDP allocated funds in 2000-2006	0.98***
Agritourism growth and RDP allocated funds in 2007-2014	0.91**
RDP allocated funds and agritourism specialized in hospitality	0.53**
RDP allocated funds and agritourism specialized in catering	0.50**

Significance: \*\* at 5%;\*\*\* at 1%

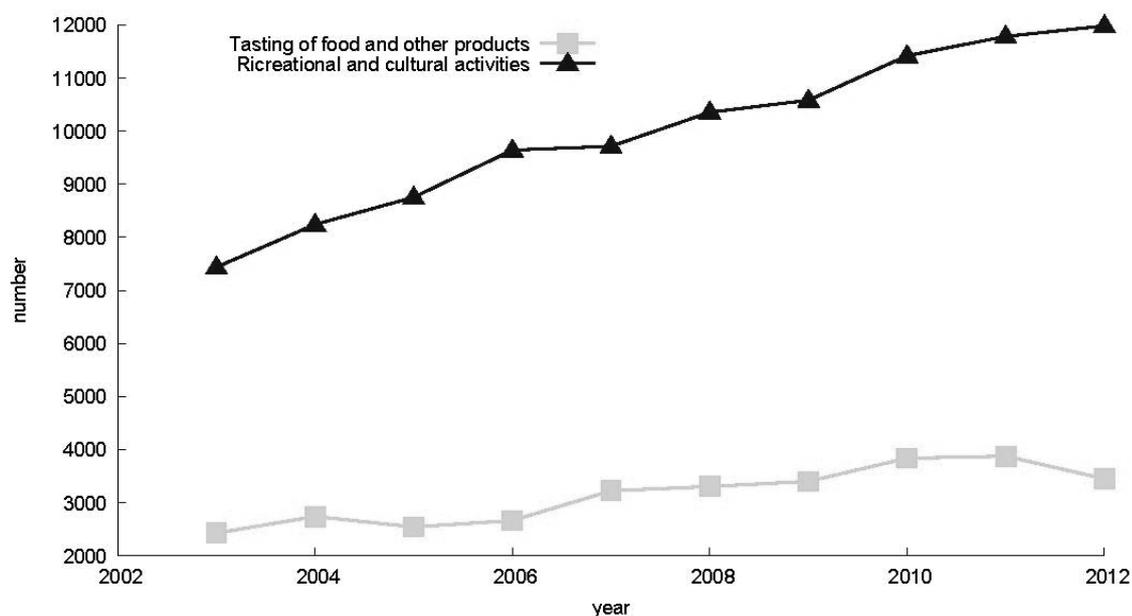
Source: own elaboration based on data retrieved from [www.reterurale.it](http://www.reterurale.it) and [www.istat.it](http://www.istat.it)



**Figure 1.** *Growth of Italian agritourism and supplied activities*

Source: own elaboration based on data provided by the Italian National Institute of Statistics ([www.istat.it](http://www.istat.it))

It is important to underline that both the European Union and the national and regional administrations have carried out plenty of actions and financing measures in order to stimulate the diversification of agricultural production and activities with positive impacts on the development of rural tourisms and agritourism (Table 1). The most recent statistical data have pointed out that the subsidies allocated during the first seven years (2000-2006) of the Rural Development Plan, called Agenda 2000, have had a greater effect in the growth of Italian agritourism compared to the following seven- year period 2007-2013. Since 2002, there has been a significant increase in agritourisms (it. *agriturismi*) because of supports allocated by the European Union through the National Rural Development Programme and predominately in favour of farm holidays farms able to supply hospitality both in bed-sitting rooms and in furnished rooms (Figure 1).



**Figure 2.** Growth of Italian agritourisms able to diversify their farm activity valorising the rural culture and local agrarian traditions

Source: own elaboration based on data provided by the Italian National Institute of Statistics ([www.istat.it](http://www.istat.it))

**Table 2.** Main results in the multiple regression model over the time of study 2003-2011. Dependent variable added value in the primary sector

Variables	Coefficient	p-value
Constant	40,517	<0.00001***
Lay-bys in agritourism (n°)	-0.85	0.007***
Dinner seats in agritourism (n°)	-0.05	0.00095***
Tasting activity farms (n°)	-0.87	0.024**
Agritourism with other cultural recreational activities	2.23	0.001***
Farms able to produce certified quality food	0.23	0.00007***

Significance \*\* at 5%; \*\*\* at 1%

Source: own elaboration based on data retrieved from [www.istat.it](http://www.istat.it)

Many Italian farm holidays farms are able to valorise the rural culture during special events. Hence, agritourists can taste traditional food produced in a specific period such as olive oil, wine, truffle and chestnuts. At the same time, agritourism can be a place to discover cultural traditions and other recreational activities tightly linked to rurality (Figure 2).

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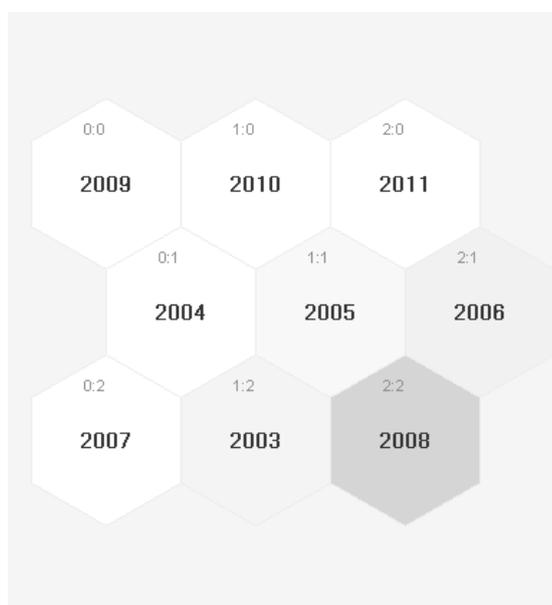
The added value in the Italian primary sector using the time series has pointed out in the multiple regression model a positive correlation with the growth and diffusion of certified quality agri-food and with the increase of agritourisms able to provide recreational and cultural activities correlated to rurality and to the rural and agrarian life in the countryside. The regressor estimated by OLS has stressed that there is a positive correlation between the dependent variable agrarian added value and the different types of agritourisms, such as agritourism in camping with equipped lay-bys, tasting activities and traditional farmhouses able to offer food and beverages during a catering activity (Table 2).

**Table 3.** Main results in the multiple regression model over the time of observation 2003-2011 in Italy. Dependent variable number of agritourism

Variables	Coefficient	p-value
Constant	1,132.85	0.03000**
Dinner seats in agritourism (n°)	0.008	0.03615**
Tasting activity farms (n°)	-0.97	0.026**
Agritourism with other cultural recreational activities	0.94	0.0006***
Farms able to produce certified quality food	0.082	0.0001***
Lay-bys in agritourism (n°)	0.27	0.10

Significance \*\* at 5%; \*\*\* at 1%

Source: own elaboration based on data retrieved from [www.istat.it](http://www.istat.it)



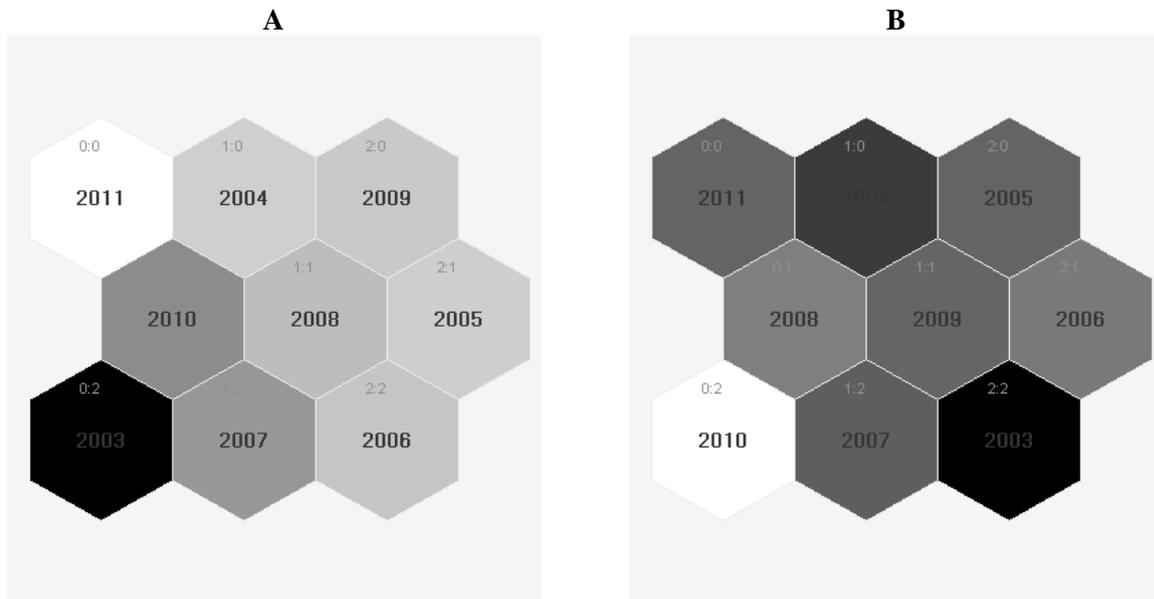
**Figure 3.** Main results in the component planes of socio-economic variables over a nine-year time in Italy

**Note:** The best results are indicated in grey and the worst results in white hexagons

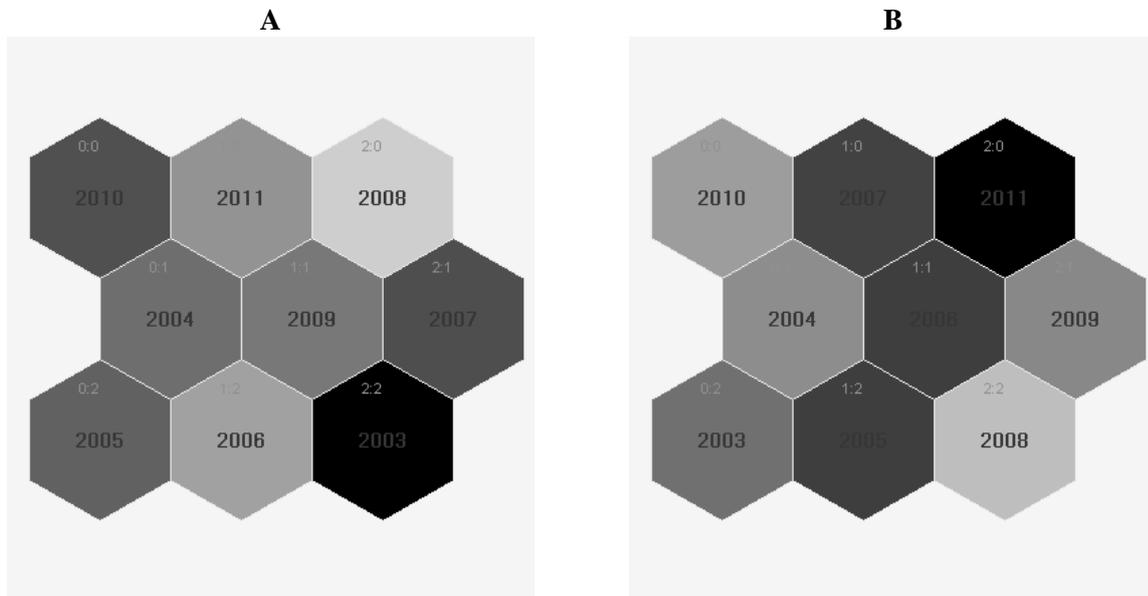
Source: own elaboration based on data retrieved from [www.istat.it](http://www.istat.it)

The production of certified quality food has had a positive impact on the added value in the primary sector although the value has been lower than that analysed in other Italian agritourisms able to provide recreational and cultural activities. Quantitative simulations have pointed out that an increase of farms is able to supply catering, recreational and cultural activities and the fact that they can also provide certified quality food has had a significant and direct impact on the development of farms during the period of study (Table 3). The activity of agritourist camping does not seem to have any effects on the development of agritourism in Italy.

The quantitative analysis using the Kohonen's maps related to the overall socio-economic development and to the role of Italian agritourisms and certified quality food has underlined good results in terms of component planes or black hexagons in 2008 (Figure 3). Summing up, the findings in SOMs have underlined that there was a significant drop of farm holidays farms in 2011 but, in general, the number of Italian working and operative agritourisms was stable over the time, with the best result achieved in 2003 and the worst result in 2011 (Figure 4).



**Figure 4.** *Component planes in Italian agritourisms (A) and certified quality food (B)*  
 Source: own elaboration based on data retrieved from [www.istat.it](http://www.istat.it)



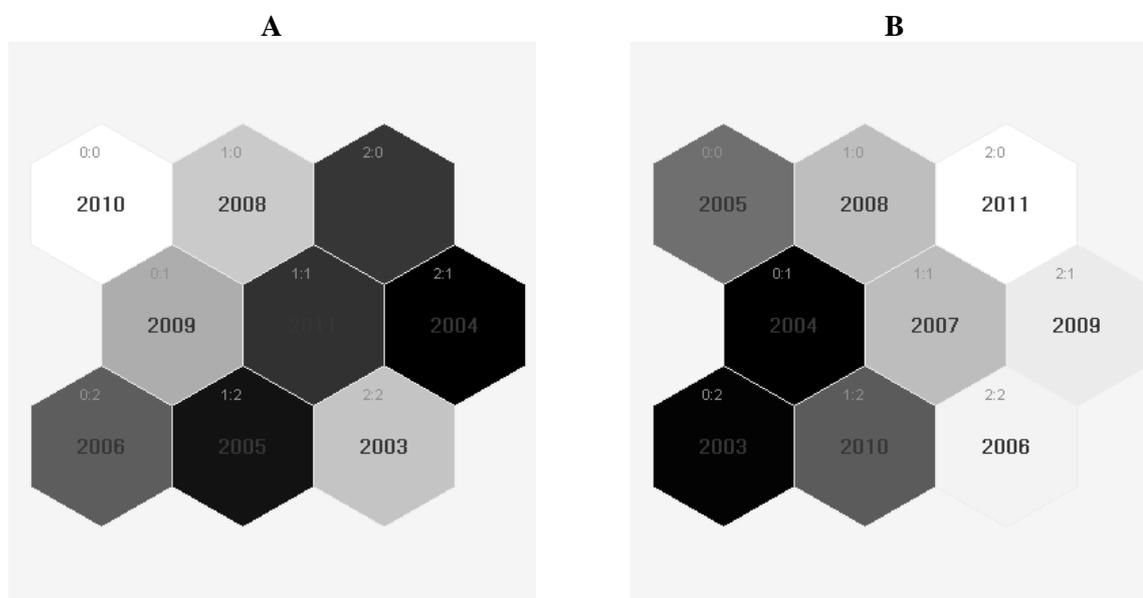
**Figure 5.** *Kohonen's maps in Italian tourists (A) and foreign tourists (B) in Italian agritourisms*  
 Source: own elaboration based on data retrieved from [www.istat.it](http://www.istat.it)

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The comparison between the development of farms and certified quality food made in Italy has stressed that in 2003 there was the best performance (Figure 4). In the self-organizing map, it is possible to observe that the rural world was hit by the economic crises even if Italian agritourisms characterized by pluriactivity produced many positive effects on farm net income.

Analyzing the variable attendances of Italian and foreign agritourists accommodated in farm holidays farms during the nine-year period of investigation, findings have pointed out an improvement in the component planes only in the recent years, with a significant effect of the international economic crises occurred in 2008 and 2009 (Figure 5). In general, it seems that Italian agritourists are more sensitive to the economic downturn than the foreign ones, although in 2011 it was possible to stress a turnaround in Italian agritourists.

The analysis of the economic aspects and parameters correlated with the economic efficiency has pointed out that the variable added value in the primary sector and the Gross Domestic Product (GDP) are quite sketched, with a drop in the added value in 2010 and in 2011 and a decrease of the GDP in 2010 and in 2011, recording the worst result in 2011 (Figure 6).



**Figure 6.** Component planes in terms of hexagons of added value (A) and in terms of Gross Domestic Products (B) in the Italian primary sector

Source: own elaboration based on data retrieved from [www.istat.it](http://www.istat.it)

### CONCLUSIONS

Multifunctionality in pluriactive farms is a direct consequence of the transition from the productivist model of the Common Agricultural Policy started in the early 1990s. In 1992 the European Union rethought completely, after 25 years, its own unique common and shared policy in terms of financial subsidies allocated towards farmers. In fact, one of the most important targets of the CAP was to protect the European market and also to support farmer's income by price of agricultural commodities higher than international price. The consequence of the reduction in specific support price strategies has been a growth of out-migration from the countryside.

However, the function of farmer is totally changed. In fact, nowadays, farm is a unit of production aimed at contrasting socio-economic marginalization in rural space supporting the environmental protection as well. The role of farmers as dwellers of a new holistic rurality is not easily perceived by the common opinion. Hence, efforts towards the rural planning process for the period 2014-2020 do not seem to be going in the right direction or towards a complete economic, social and

political acknowledgment of the role farms and farmers have in society and in favour of environment protection.

Agritourist activities are quite integrated with the rural world as a whole and they are rooted in the rural space and in its traditions and cultural heritage with the consequence of enhancing the growth of agricultural certified quality productions especially in upland areas at higher risk to marginalization than the lowland ones. In particular foreign tourists are the first and foremost flow of tourists able to appreciate these rural integrated aspects, blending food, rural traditions, rural territories and agritourism in an integrated marketing perspective.

The rural world is still perceived as the best way of rurality that has significant consequences on the production of quality certified food towards farmers, who have discovered a complete, formal and perfect realization of a synergistic exploitation of multifunctionality in the rural area. Although it is pivotal not to conceal something argued by a plenty of authors who have singled out in agritourism meaningful opportunities of growth thanks to low cost tour operators (Santucci, 2013) able to led agritourism out of a niche market temporally and spatially defined, with the consequence of reducing the peculiarities of rurality and the concept of rural idyllic.

In conclusion, the enhancement of agritourism and certified quality food should find a local deep-rooted synergy and a steady collaboration with public administrations and private partners, or rather local stakeholders, who should be able to overcome their divisions and misunderstandings by exploiting their consolidated forms of integration and collaboration through specific network contracts (Bartolo et al., 2013). The latter is not very common and is diffused in the agricultural sector and also in tourism, but it could boost rural territories generating a network of skills and competence between the primary and tertiary sectors in rural areas stimulating a synthesis of rurality in its two inner features, namely entirety and complexity.

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