Analysis of agriculture in term of its territory: an interpretation

Aurora Cavallo, Davide Marino

1. Introduction: transformations within the territory and the role of agriculture

Economic and territorial transformations within the agricultural sector are becoming increasingly complex. These changes encroach upon the traditional models of land use and interconnections within the agricultural and rural space, and also on the forms and roles of the farming practices taking place there (Donadelli 2006; Barbers 2009; Ploeg 2009). These relationships between city and countryside are themselves evolving in different ways: settlement and employment flows, which can involve, for example, food and income, take many complex interlinked forms, and are under many aspects still unexplored. The relationships within the farm to food supply, in both vertical and horizontal terms, are relaxing their ties with their territory, in a context that is becoming more mobile and less easy to understand. To paraphrase Baumann (2000), we will focus on the liquid aspects of a territory, relating to transition and decline (Celant 1988), where it has been increasingly difficult to apply theoretical methods and analytical tools, in particular those relating to agricultural economics. In this context, actual geographical territories seem to be determined less by spatial and temporal factors and more by the interconnections and flow of information between the players and the various economic, social and cultural drivers (Farinelli 2003; Augè 2007).

This paper has a dual objective: we will first review the main theoretical streams relating to the configuration of land use in farming, looking at the main contributions made by agricultural economics in analysing land use. This is the subject of paragraph 2. These research streams are not discussed in chronological order, but using a systematic procedure that highlights the changes to theoretical and methodological approaches in relation to the ongoing transformations of the role of agriculture within the structure of a territory. In this way, we have identified four major areas: landed property and territory, the role of agriculture in economic development and agriculture as landscape, and farm production in urban/rural relationships. In second place, in paragraph 3, we have proposed the idea of landscape as a method for analysing the dynamics of evolution within a territory.

2. Analysis of the territory seen in agricultural economics literature

Economic agricultural literature in Italy has traditionally focused on studying, mapping and classifying specific territorial aspects when analysing farming. The first research stream within which we classified the early works is linked to analysing the
role of landed property and farms within the territory. This analytic model has been widely applied to agricultural policies and to justify the State's intervention in Italian agriculture in the 1950s. This strand started with the work carried out by Ghino Valenti at the beginning of the 20th century and published by the Catasto Agrario, the Italian agricultural land register in 1919. Over the same period, and in part due to the work of Serpieri, the concept of an agricultural zone was defined as a territorial unit with particular intrinsic characteristics linked to the physical environment in relation to its economic environment and the historical precedents specific to land and farming systems. Several years later, INEA (the Italian National Institute of Agricultural Economics) published studies on landed property (Turati 1947) and there were other works exploring the processes of pulverisation and fragmentation (Medici 1962).

The work of numerous agricultural economists concentrated on zoning the territory of Italy into homogeneous domains, placing the farm at the centre of the analysis as the reference unit of rural space. Bandini (1968) proposed agricultural systems as spatial domains in which some subjects determine the conservation of the system itself by their interaction with the outside.

The second research stream is closely linked to the role of agriculture in the post-war economy. These works, still closely linked to INEA and its actions of co-ordination and direction, had the purpose of supplying tools to define agricultural policies, and to plan and programme a process for agricultural development, which, at that time, was synonymous to the development of the territory as a whole. Medici (1956) and Rossi Doria (1969), members of the research group linked to INEA, with their respective works, Carta dei Tipi d’impresa (Map of Business Types) and Analisi Zonale dell’Agricoltura Italiana (Analysis by Zone of Italian Agriculture), painstakingly gathered empirical data to produce a markedly interdisciplinary methodological analysis, combining agriculture and social and geographical aspects to describe the heterogeneous nature of the Italian landscape. Alongside studies on socio-economics, soil profile, agronomy and institutional aspects, cartography-based research, such as the Carta dello sviluppo agricolo (Map of Agricultural development) (INEA 1976) led to a true representation of farming reality in Italy, highlighting, in particular, the descriptive aspects of the relationships linking farms to their own particular territorial context.

The third stream - agriculture as landscape - is a hybrid stream of agricultural economics and the history of agriculture associated with the work of Sereni (1961). He asserted that the study of agricultural landscape forms could define the historical character of Italian farming, and was the first to propose analysing the spatial and landscape aspects of agriculture, an approach that found particular favour among the geographers (Turri 2000; Farnelli 2003; Quaini 2009). Today, Sereni’s work still retains its pioneering worth in the light of two key aspects. In first place, the concept of landscape as a form also takes in aspects relating to the evolution and dynamics of agricultural land. In second place, the analysis of elements relating to the landscape, which is seen as the natural environment resulting from technical transformations and farming-related interconnections, implies that landscape itself is a human matter, bringing the cultural and identifying aspects of agriculture into the equation. While not belonging to this area in terms of subject matter, Bevilacqua (1992) constitutes a key reference in the field of agricultural economics linked to the landscape. His work falls within the literature on the historical description of agricultural relationships. He identified three agricultural systems: Po valley farms, share-farming in central Italy and latifundium systems in southern Italy, specifying their various forms of production and their impact on building patterns and social and environmental aspects.

The fourth macro areas - farm production and urban-rural relationships - emerged at the end of the 1980s, in the light of the transformations that had affected agriculture and its
connections with the sectors situated above and below. Among these, the most significant concerned processes to modernise agriculture and the progressive convergence of farming practices towards those prevalent in other industries. In this phase, a lively debate emerged on agro-industry and its role in territory-related matters. Agricultural economy, adapting to some of the theoretical approaches and methodological tools taken from industrial economics, re-appraised the relationship between farming systems and territory, in its search for interpretive models capable of explaining the regional differences within the various Italian agricultural development pathways. These district-related approaches were also used to analyse the rural territory and its transformations.

The research strands connected to this phase can be summarised within three analytical categories that study the land use element of agricultural development together with a classification of land use in agriculture: local and territorial farming systems (Cannata 1989; Favia 1992; Carbone 1992), supply chains (De Muio 1992) and farm and food districts (Cecchi 1988; 1992) and rural districts (Sassi 2009), where the latter analysed the role of institutions in directing processes for local development and, over the course of the years, determined specific legislation. More recently, in order to encourage processes of integration promoting competitiveness and innovation between sectors and to steer the processes of aggregation between businesses (Zazzaro 2010), a precise legislation, Law no. 122/2010, came into force to regulate business networks and network contracts.

Figure 1 gives a summary of the main research streams examined and their relative contributions to science and legislation concerning the specifications of agricultural land use.
The scheme in Figure 1 places a new historic interpretation on the work carried out by agricultural economists to identify and demarcate homogeneous areas within the Italian agricultural world. It can be seen that, by changing the analytical criterion, the reference scale also changes and with it the reading of the elements of the totally diverse farming territory in Italy, from the 702 agricultural zones in the 1929 Land Register to the 84 landscape forms identified by Sereni (1961), Rossi Doria’s 25 macro-zones (1968), the 61 farm and food districts, the 28 rural districts, and the interpretation of the territorial agricultural systems (Cannata et al. 1989), up to the recent developments connected to business networks, seen as an element with which to analyse agricultural production within the territory.

3. Landscape as a method to analyse transformations within a territory

In an article written just over ten years ago, Scarano (2001) proposed a particularly rigorous theoretical review of the relationships between agricultural economists and the territory. He underlined the necessity of re-assessing empirically the complexity of relationships within a territory proposed by the experts, within the mainstream of disciplinary specialisation and for purposes specific to agricultural economy. A scholar’s most significant contribution, in this context, is to provoke their own scientific community to go beyond an approach based upon the ex-post analysis by district of cases of territorial success - which is unable to handle the spontaneous dynamics defining the territory itself - and, instead, set up a model able to identify the framework and the taxonomy of the relational processes that make an impact on existing structures at territorial level and their evolutionary pathways (Scarano 2001).

Assuming that the analysis of spatial clusters and the specialisation of agriculture is at the basis of territorial research, we must question the validity of such an ideological method, during a phase defined by the unravelling of the relationships that determine the functional roles of farming and building systems relative to the physical environment and its natural resources. From this point of view, understanding the identity of a territory, not simply in terms of the aspects that concern farming but also its social aspects and those relating to settlements, becomes a more complex process and one that redefines the relational components that had distinguished an urban from a rural area, contributing towards homogenising structures and processes (Barberis 2009; Fonte 2010). Over thirty years ago, De Matteis (1978) made the observation that urban outskirts, covering entire regions, and even traditional cities emptied of their independent functions, are not other than the new face of the countryside. If we stop at the visible aspect of things, it seems that the countryside is becoming urban, but if we look at the social and economic relations, it is the city that, expanding, is becoming rural, that becomes a space dependant on a few core centres (ibid, 185).

The vertical and horizontal connections within the farm and food chain are starting to relocate, crossing regional boundaries and, very often, national frontiers, in a context where we must ask ourselves whether it is still possible to see a farm as a functional research unit - even when considering its other facets apart from production - in the light of the functional forms and relationships that it establishes with the territory today (Ploeg 2009). The idea of the landscape as a method for analysing transformations, which involve the complex relationships between farming and the economic, social and environmental systems in which farming takes place, has, starting with Sereni’s work, been amply covered by geographers (Turri 2000; 2002; Farinelli 2003).
In our search for analytical categories in which to study a possible methodological principle relating to the landscape, we have identified four research models: complexity, density, connection and resilience (Marino, Cavallo 2009). By intersecting with social, productive, environmental and building systems, these models describe the individual spatial dimensions for forms and relationships, which are not other than the n landscapes that compose the complex mosaic of a territory. The purpose of our model is to identify several analytical aspects that can be used to describe and classify the transformation processes linked to the landscape. In Figure 2, this is applied to an agricultural landscape. In this further concept, it is clear that modelling evolution paths linked to agricultural systems leads to defining landscapes within an ideal evolutionary scale that has, at one pole, the traditional landscape, which retains all the historical and cultural aspects of an agricultural landscape, while the agricultural landscape of industrial farming is at the other. In the intermediary levels of this scale are the many forms of agricultural land, and these, probably more than the others, should be thoroughly investigated to prepare for landscape planning during their evolutionary process. The n landscapes described by the model define different evolutionary levels: complex, well preserved landscapes, resilient or fragile environments, fragmented contexts or those where the dynamics of connection are solid. The identification of suitable indicators and threshold values for the various dynamics can translate into different models of land use planning and programming.
Complexity/simplification, as a parameter of analysis, describes the measure in which natural, social and economic capital is produced, accumulated and distributed within the socio-economic and settlement-related processes at local level. Resilience/fragility identifies and describes social relationships, ecological differences and diversification of farming, making the environment more capable of absorbing environmental and economic fluctuations coming from the outside. Connection/fragmentation is the model that traces, on a temporal level, the various forms of relationship and integration between human activity and environmental and ecological issues and their dynamics. Transition between the two classes marks the intermediary landscape forms and relationships, defined by increasingly blurred distinguishing situations.

The model proposed in Figure 2, which examines the work pathway in a critical and challenging key, needs to be developed further with classification by synthesis indicators, in order to map and describe the dynamics of evolution and transformations of land use at four levels of investigation, the environmental, production, social and settlement-related aspects summarised in Figure 2.

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<thead>
<tr>
<th>ENVIRONMENTAL SYSTEM</th>
<th>RESILIENCE</th>
<th>CONNECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the natural capital preserved? Is it employed locally in productive processes? Is the natural capital managed at local level?</td>
<td>What level of resilience is there in the area? Are eco-system services recognised?</td>
<td>What level of ecological fragmentation is there in the area? What is the state of ecological networks? What level of environmental conservation is there in the area?</td>
</tr>
<tr>
<td>SOCIAL SYSTEM</td>
<td>What is the role of social capital? What demographic dynamics are there in the area? Are they stable? What forms define the landed property?</td>
<td>Are there migration dynamics and what mobility flows are there? Can the migration flows weaken human capital? How is the population distributed in the territory? Is local culture well preserved? Is local knowledge a productive factor?</td>
</tr>
<tr>
<td>AGRICULTURAL SYSTEM</td>
<td>What level of multi-functionality have the agricultural systems in the area? How diverse is the agro-forestry mosaic? How varied is land use? What relationships tie the productive system to the care of the natural capital?</td>
<td>How specialised are the productive systems of the area? Are the productive systems linked to the progress and volatility of the markets? What role has innovation in the productive processes?</td>
</tr>
<tr>
<td>SETTLEMENT-BASED SYSTEM</td>
<td>What relationship is there between settlements, networks and functions in the territory? What elements define the formal and rural architecture?</td>
<td>Are the forms of settlement resilient to change? What land use dynamics are there in the area? What are the settlement models and what forms define the environment?</td>
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4. Conclusions

This note, going from a review of the main works in literature on agricultural economics to the defining aspects of agricultural land use after the second world war up to the most recent studies, reiterates the importance of studying and identifying the many configurations farming takes within a territory, as a method to analyse the transformations in agriculture and the basis for regulation policies and territorial-level programming and planning. The point of view chosen here is that of the landscape, analysed and interpreted within a wider context involving the relationships between
agriculture, environment and society and our way of settling and transforming a territory. This development is located within a conceptual path that involves moving from a sector-based to a territory-based approach, and it underlines the necessity for a greater integration between disciplinary areas and areas of intervention, both in the scientific debate and in the actual planning of policies that are both the foundation and the purpose of territorial research.

As part of the widespread processes for landscape uniformity - which are linked to forms of extensive urbanisation that blur the boundaries between cities and countryside and diminish the role of the landscape as a factor of identification and recognition -, we have tried to highlight the role of intelligent understanding as a decisive tool for improving our capacity to interpret and plan the territory, while keeping in mind and recognising the environmental, productive, social and cultural processes that have directed its construction.

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Abstract

The changes affecting farming and its function - like for other sectors of the economy - are becoming increasingly complex, strongly effecting the social and building patterns within a territory. These changes radically modify the traditional balance between land use and its interconnections in rural areas, and how these interact with urban areas, (DonaDieu 2006; Barberis 2009; Ploeg 2009; Fonte 2010). To paraphrase Baumann (2000), we will focus on the fluid aspects of a territory, relating to changes and decline, where it has been more and more difficult to apply the theoretical methods and analytical tools commonly used by agricultural economists, who have historically always carefully studied issues concerning the territory when analysing agriculture. This work first reviews the main agricultural economics research streams and then advances the idea of landscape as a method for analysing the transformations affecting the complex relationships between farming and the various economic, social and environmental systems of the territories within which they are situated (Turri 2000; 2002; Farinelli 2003).

Keywords

Territorial changes, landscape, rural/urban, discipline history, agricultural economics.

Bios

Aurora Cavallo, PhD in agricultural Policy, is Postdoc at Economics at the Department of Bioscience and Territory of the University of Molise. She works with Consortium for Socio-economic and Environmental Research (Cursa). e-mail: a.cavallo@cursa.it.

Davide Marino is Associate Professor of Agricultural Economics at the Department of Bioscience and Territory of the University of Molise. He is President of the Consortium for Socio-economic and Environmental Research (Cursa), e-mail: dmarino@unimol.it.