Infrastructures versus agriculture. Critical challenges in Lombardy planning

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1. Strategic Contradictions

100,000 hectares of European agricultural areas have disappeared over the last decades (Joint Research Centre 2006; EEA 2006). 10 million hectares of agricultural land have been lost in Italy over the past 150 years. 80,000 hectares from the 1990s to 2000s (Paolillo 2005; Pileri 2008). From 1956 to 2010, planned urbanisation on agricultural land has increased by 166%.

The national trend is the effect of planning processes that affect all Italian regions. The Veneto area has lost 12.6% of agricultural lands in 10 years. 200 hectares have been eaten up from an amusement park in Lazio. In the Marche 60 hectares have been allocated to hotels and dwellings. In Lombardy 17,457 farms are closed down over the last decade, thought in 2000 the plan for the general development of rural areas was carried out.

Meanwhile the consumption of farmland was still one of the objectives set by the new regional land governance framework, (regional law 11/03/2005 no. 12), since 2003 to 2008 another 2,733 hectares of agricultural land have been lost (Pim 2008). The urbanization has reached 7.6 square meters per inhabitant per year.

The increase of the inhabitants (5.4%) compared to 9% of the new urbanized land, highlights how the farmland consumption is the result of a manipulative response to the crisis of economy. It is the Soros’s “reflexivity interference” (2008). It shows that investments are not based on knowledge of the real situation, but on interpretations aimed at managing virtual situations.

This misunderstanding has irreversible effects on real framework. The two functions, cognitive and manipulative, meet and influence each other. The result is a distorted perception of emergencies that generates responses oriented towards development models far from the questions (Bagnoli 2007).

The new building regulations introduced by the “National Housing Plan” (DL 13 May 2011 70) marks the choice to boost the economy using concrete. As a result, the demolition and reconstruction works are awarded 35% more volume also in agricultural areas. In Sardinia the new rules allow up to 20% expansion by volume for dwellings located in agricultural areas. In Liguria larger volumes can be legally built within the Regional housing plan framework.
Meanwhile, at the beginning of 2012, Lombardy together with the departments to the territory of Piedmont, Valle d’Aosta, Emilia Romagna, Veneto, Liguria and Friuli Venezia Giulia, in addition to the autonomous provinces of Trento and Bolzano, signed a commitment for the reduction of land consumption. The value of land is influenced by these contradictions. Over the last decade in Lombardy, Veneto and Emilia Romagna, urban land value grew ten times more than that of agricultural land (ERBA, AGOSTINI ET AL. 2010). Another example of a partial response that generates new emergencies is the “objective law” (Legislative Decree 13 May 2011, n. 70, First urgent measures for the economy). It forecasts 390 new works, 83% of which are roads, highways and railways. In Lombardy, 400 farms are involved by the construction of the motorway Brescia-Bergamo-Milano (BRe.Be.Mi.). Two millions square meters of farm land will be lost, without considering those dedicated to the secondary road network to support and logistics. Over one hundred hectares of land will be made useless. Just in the territory of the province of Lodi, the high-speed rail (TAV), is eroding 265 hectares of agricultural land. The amount is equal to 20% of the consumption of land registered in Italy between 1999 and 2007. This consumption of non-renewable resources is due to the infrastructures of national and international scale. The satisfied needs are almost always external to penalized areas (CIRCS 2012).

2. Today high-value crops. Tomorrow asphalt stripes

Mezzago is a small town in lower eastern Brianza. Over the last years the containment of land consumption was pursued by re-evaluating high-value crops. Rediscovering the pink asparagus, local certified product (De.Co., Denominazione Comunale) has been one of the main strategies. Added to the list of traditional regional food products, the pink asparagus has become a driving force for local marketing. It is the principal attraction of the “Mezzago May,” enogastronomic and cultural event (DELA PIERRE 2011). One of the biggest suppliers of the festival is a family of farmers. They began in 1981 with a small plot within the grounds of the natural area of Rio Vallone Park. Within ten years, they have been able to merge 5.5 hectares of crop lands, reaching a production of 135 tons of pink asparagus for year. At the end of 2006 the farmers introduce to the local council an application for a new outbuilding. They discover that their croplands will be occupied by the passage of the Pedemontana motorway and by the new railway when the building consent is refused. To manage their production, they ask to be relocated in a cropland with similar characteristics. The request has not been answered. Meanwhile, there is the proposal of compensation for the expropriation. The Values Agricultural Medium (VAM), annually calculated by a provincial Committee are the references for assessing it. They are based on the agricultural region. The amount offered does not consider the high-value production, nor the years spent in the business development. It does not allow the farmers to buy another farm to continue their production.
This case also shows the problem of the farm development which remains locked even if the new infrastructure should not be made. Only 1% of the works defined by the "objective law" has been completed until now. Meanwhile, a strategic infrastructure project is enough to stop the development of a strategic farm company. Also if it means to penalize a local certified product on which the community had concentrated its promotion policies.

3. Interpreting sustainability

The Laboratory of Urban Planning, of Polytechnic of Milan (Master’s in Environmental Architecture), integrates disciplines belonging to the urban and agrarian sciences. The objective is to provide a systemic vision for assessing the planning sustainability. Gorgonzola village, is one of the case studies chosen.

The area, located at south-east of Milan, is affected by the expansion of the metropolitan area. It is also partially covered by protected areas (e.g. South Milan Agricultural Park, Molgora Park, Park of farmsteads) and by natural area (Sic, Site of Community Importance).

The agricultural landscape is characterized by a large number of historic farmstead tied to dairy cattle and to a rich water network linked to the proximity of the Naviglio Martesana, the canals Muzza and Villoresi and the river Molgora.

The most valuable agricultural areas (44,613 sqm) are predominantly located in the central-western, along the bank of the river Molgora. The areas of high agricultural value (51 ha) are located in the east side. On the rest of the land, close the urbanized area, the agricultural value is medium, with an area of about 665 ha. The road system is characterized by the presence of roads and highways, comprising the motorway A4, linking Milan and Venice, and the Milan’s ring road east (A51) which runs to the north.

In 1975 the new subway leads to a strong increase in urbanized land. From 2006 to 2011, the utilized agricultural area is reduced from 7,321,864 sqm to 5,670,000 sqm with 66 farms.

The urbanization grows between the metropolitan subway and street Padana Superiore, during 2012. It follows the infrastructural barriers to the north and south of the municipal area.

Among the new infrastructures under construction, major changes affecting the suburban main roads, such as the Tangenziale Est Esterna Milano (TEEM). TEEM, which connects the A4 to the A1 motorways. With 32 km, the TEEM will pass through a protected area of high agri-environmental value. Fitting between the Lambro and the Adda, the new road will erase fertile land, important for water supply.

A new strategic infrastructure is the Bre.Be.Mi., that will involve the Adda Park. The Provincial Territorial Coordination Plan also provides links between secondary roads.

In order to assess the sustainability of new planning, the research has been aimed at:
• identifying features, emergencies and vulnerability of local rural system looking at the implementation of planning processes (Fig. 1)1

1 Results and figures are by Battaglia L., Bernardi M., Bertolini B., Finardi I., project work carried out for the Course on Rural Planning (prof. Agostini S.). It integrates the Planning Laboratory (proff. Erba M.V., Calmanti G.), School of Architecture and Society, a.y. 2012-2013.
• define corrective measures to compensate the impact of new infrastructures on rural system and to address a sustainable planning.

The new road system in Gorgonzola deletes 158,860 sqm of farmlands. 101,783 sqm concern agricultural soils of medium value. The TEEM covers 57,076 sqm of farmland with high value. It is also predictable that the new road junctions will easily attract the construction of commercial and logistics, triggering new consumption of soil.

**Figure 1.** The rural system.

**Figure 2.** The compensatory measures.
The results led to the definition of action lines (Fig. 2), such as:

- creation of a ring of protection through the development of a network linking the most precious agricultural areas
- definition of an environmental corridor to protect agricultural areas affected by the new infrastructure
- relocating the new road that connects the TEEM to the West of the village, close to the subway line. The aim is to contain further urban sprawl.

The possible effects on areas of significant transformation were then translated into layout examples for the correction of municipal PGT.

4. Infrastructures of the absurd

The territorial issue of the return to the land requires the integration between public policies and structural choices. It’s the way to clarify how to enable the recovery, enhancement and development of the agri-rural contexts. Despite, the reflexivity interference leads to build a legislative framework that ends up by increasing the emergency (Agostini 2011). It often also thwarts the implementation of the good commitments made at level of strategic planning.

The opposition against the new devastation of farmlands, is led by local associations and non-profit organizations. In Gorgonzola, seminars and conferences have been organised by a group of citizens, in order to explain the social and environmental costs of the indifference with respect to a highway. It is called ‘the new infrastructure of the absurd’, which passes between parks and farms. In the project “Spiga and madia” of the District of Social Economy Brianza consumers join to the farmers.

The emergency of farmland consumption requires finding an interpretative paradigm to check the planning sustainability with respect to the rural system. Reading the role of farmlands within a vision of a bigger rural system, allows to characterize their role in the development of the territory and highlight their vulnerability and constraints at different scales.

Instead, reading the territory in separated agricultural often leads fragmented sectoral policies. It generates competition between uses and destinations. The current economic crisis wishes to change perspective. We need move from the concept of agricultural area, which when isolated becomes ‘empty’, available for urban sprawl, to the articulation of a functional system that connects agriculture to the territory and determines its outcomes.

Three main issues to resolve:

1. coordinating local planning with the larger scale of a rural system. It means overcoming a control logic transformations of land use based on constraint rules or on exclusive quantitative evaluation of the soil;
2. revising the farmland value. There is nothing more local than a cow bred specifically for a certain type of pasture (Van der Ploeg 2009). In the same way there is nothing more local balance achieved by the specific soil dedicated work, water, skills and techniques used for the production. The imposition of standardized values, as in the case of the ‘global cow’, may not be suited to the specific characteristics of agricultural production. It penalizes farmers who produced with high levels of quality. The Constitutional Court (n. 181 of 10/6/2011) states that the expropriation compensation for all agricultural areas should be equal to their actual market value. It must consider the char-
acteristics of soils, actually practiced crops, the value of farm buildings, even in relation to the exercise of farms (art. 40.1. DPR 327/11). So, the parameter of the VAM, which is independent from the specific characteristics of expropriated farmland, needs to be revised;

3. redefine the assessment to compensate the impact of infrastructures:
   • considering the damage resulting from the fragmentation of farms
   • providing joint agreements between local authorities involved, in order to allow the relocation of farm companies damaged.

Offsetting the impact of new infrastructure just through the re-payment of expropriated soil is another effect of distorted perception. Are not taken into account the losses linked to the:
   • erosion of high fertility soils,
   • inaccessibility of farms to their own irrigation resources,
   • fragmentation of agricultural enterprises,
   • agricultural areas surrounded by infrastructures that are no longer arable.

The same process is likely to be triggered by the draft law on enhancement of agricultural areas and containment of land consumption. It was approved by the Council of Ministers (14/09/2012 November 2012, n. 45). The goal is to set a maximum threshold of consumption farmland at the national level. The concern is that in this threshold cannot be considered works already authorized or planned, including strategic infrastructures.

It would be desirable that “back to the land” does not mean only the new ‘peasantry’ of agricultural work, but also a renewed ability to appraise the farm land in the planning processes.

It means to understand that the wrong location of strategic infrastructure breaks the agro-ecosystem balance. It leads to the disappearance of strategic economic, local, social, cultural and environmental resources. Partial responses are not often based on real knowledge.

BreBeMi\(^2\) states that the new motorway will save 6.8 million hours per year, with an increase of 382 million euros a year for the GDP. It would be interesting also to assess the number of millions of lost work hours per year following the closure down of farm enterprises and the consequent loss of GDP related to their activity.

Unione Camere noted that in the first quarter of 2013 13 thousand farms are closed down. The Italian Farmers Confederation (CIA) attributes the cause to the absence of an agricultural policy aimed at the rural development.

It is the direction of our research. The model applied in Gorgonzola was tested on 50 communes in Lombardy. The aim is to develop a conceptual framework to guide new strategies able to respect the real value of farmland and to enhance rural development.

References


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\(^2\) <http://www.brebemi.it> (last visited: December 2013)
Abstract

In Italy 20,063 square meters of farm lands are used daily by urbanisation. In the first quarter of 2012 26 thousand farms were closed. These are the effects of land use policies that are not able to connect rural development strategies in spatial planning. The construction of new infrastructures is a good example of the problem. In Lombardy, the Brebemi will involve more than 400 farms. More than two million square meters of land will be expropriated. Without considering those which will later be dedicated to secondary roads to support and logistics. An interpretative paradigm of planning sustainability with respect to the rural system is required.
The research focused on setting out proposals to provide an integration framework to support the rural system in the new sustainable planning. The Lombardy case study is presented to highlight roles and mutual conditioning between rural development and spatial planning, both large and small scale.

**Keywords**

Planning, agriculture, soil, sustainability, infrastructures

**Bio**

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