Paper prepared for the 122nd EAAE Seminar

"EVIDENCE-BASED AGRICULTURAL AND RURAL POLICY MAKING: METHODOLOGICAL AND EMPIRICAL CHALLENGES OF POLICY EVALUATION"

Ancona, February 17-18, 2011

New approach to analyze relationships between agritouristic supply and territory

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Abstract

This paper defines the phenomenon of agritourism in Friuli Venezia Giulia (NE Italy) at the end of 2009, in the light of the multifunctionality of agritouristic farms and taking into account the land use. The proposed statistical approach to outline the situation includes (a) the classification of the variables linked to agritouristic supply to find the main supply types, (b) the Principal Component Analysis (PCA) in order to classify the regional agritourisms according to their supply and (c) the Canonical Correspondence Analysis (CCA) to investigate the relationships between agritouristic supply, agricultural land use and territory. Since the CCA is widely used only in social and environmental sciences, this work represents its first application in agribusiness field. The method becomes important during the agricultural policy planning processes because it provides decision makers with a means of rapid assessment of the relationships between rural supply and land uses on the territory.

Keywords: Rural Tourism, Agritourism, Canonical Correspondence Analysis (CCA), Agricultural Policy.

JEL classification: Q13, Q18.

1. INTRODUCTION

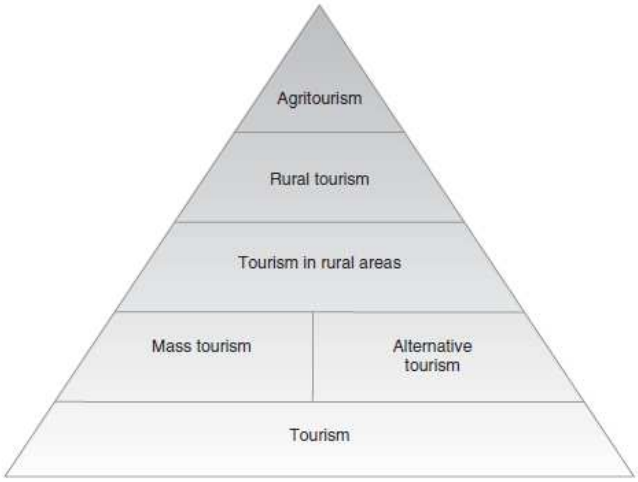
People are receding from "traditional" tourist destinations, so that, generally, tourism supplies are changing progressively with the main aim of satisfying the customer's "love for variety" and increasing demand for quality environment such as non-urbanized, rural and protected areas (e.g. nature parks), recreational areas or sites of cultural and historical value (WTO, 2004).

1.1. Rural tourism

Rural tourism is a subset of tourism (Fig. 1, Sznajder et al., 2009). It should not, however, be considered as an exclusive segment of tourism or in opposition to other tourism market segments, e.g. cultural tourism, business tourism, spa tourism, winter sports tourism.

No internationally accepted definition of rural tourism exists at present. Nevertheless, since tourism is more a demand-side concept, the following basic definition can be used to describe rural tourism: rural tourism is the activities of persons travelling to and staying in rural areas (without mass tourism) other than those of their usual environment for less than one consecutive year for leisure, business and other purposes (excluding the exercise of an activity remunerated from within the placed visited) (Eurostat, 1998).

Fig. 1. A range pyramid of tourism related terms.



Source: Sznajder et al., 2009: 6.

Moreover rural tourism is a recreational experience involving visits to rural settings or environments for the purpose of participating in experiencing activities, events or attractions not readily available in urbanized areas. These are not necessarily agricultural in nature (according to AgroTourNet European Project, 2008) and include interest in farms, nature, adventure, health, education, arts, and heritage and experiencing living history such as rural customs, folklore, local traditions, beliefs and common heritage (Bramwell and Lane, 2003).

The key parameters that define rural tourism are: it is located in rural areas or functionally rural, based on small-scale and traditional activities and enterprises (rural in scale), relies on the traditional qualities of the countryside, develops slowly under the control of local people and is non-uniform, reflecting the complexity of the rural environment (Lane, 1994; Chanchani, 2006).

1.2. Agritourism

Care must be taken not to confuse agritourism with rural tourism. Agritourism is just a part of rural tourism and refers to the act of visiting a working farm or any agricultural, horticultural or agribusiness operation for the purpose of enjoyment, education, or active involvement in the activities or operations of the farm (Sznajder et al., 2009).

In Italy agritourism is regulated by the Law n° 96 of 20th February 2006 that defines agritourism as: "accommodation and hospitality activities carried out by farmers (…), through the utilization of their own farm in connection with the activities of cultivation of the land, of silviculture and of the raising of animals". Italy is the only country in the European Union that has specific laws regulating agritourism, whereas elsewhere this particular type of accommodation is included in the more general sector of rural tourism. The main objectives of the law are to issue effective regulations that improve the growth, qualification and characteristics of the accommodation structures (Santeramo et al., 2008). In Italy, agritourism has managed to carve out a considerable space for itself in the area of the so-called "non-

traditional tourism" to such an extent that besides being an integral source of income for farms, it represents a valid tool of competitiveness and development of enterprises in rural areas. In fact, in those places agricultural activity is combined with the hospitality industry: a more important synthesis of the multifunctional role of agriculture (Privitera, 2009).

1.3. Multifunctionality and agriculture

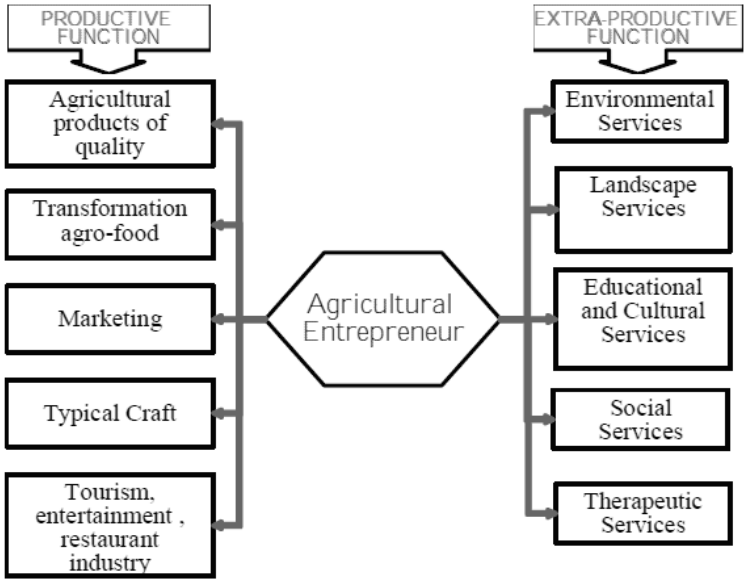
The multifunctionality represents a strategic key of enhancement and development of the rural sector and it conjugates the sustainable agriculture, the multifunctionality of the resources, the food safety, the multiactivities of the agricultural household, the territorial equilibrium and the maintenance of the landscape (European Commission, 1999; OECD, 2001; Idda et al., 2005; Lecardane and Giampaolo, 2009).

The agriculture as primary function of production of necessaries has today new purposes such as environmental, cultural, landscape ones, sustained by the community politics (Fig. 2). This new functions are known as the multifunctionality of agricultural holdings.

The Common Agricultural Policy (CAP) mid term review (2003) has begun to assign to agricultural entrepreneur new skills typical of the secondary industry and of the services sector. The EC Regulation No 1698/2005, being the actual reference framework for the second pillar of the CAP, gave to agriculture three functions:

1. Food function: it must be increased the competitiveness of the agriculture in the world markets (reducing public support through the development of the market) ensuring high levels of product quality and food safety;
2. Environmental function: farming must produce positive externalities, reducing those negative and contribute to environmental safety;

Fig. 2. Products and services of the multifunctional farmer.



Source: Lecardane and Giampaolo, 2009.

3. Rural function: agriculture must help to preserve the rural landscape, cultural traditions and contribute to local socio-economic development of local communities.

These three functions together are summarized in the term "multifunctionality ".

1.4. Rural Development Policy 2007-2013

The Rural Development Policy 2007-2013 focuses on three areas in line with the "three axes" of measures laid down in the new rural development regulation: improving competitiveness for farming and forestry; environment and countryside; improving quality of life and diversification of the rural economy (EU Council Regulation No 1698/2005).

The planned measures for each axis are shown in Fig. 3; those activated in our study area, the Friuli Venezia Giulia (FVG), North-Eastern Italy, are highlighted in grey.

In this context, development of agritouristic businesses becomes fundamental to achieve the aforementioned objectives.

2. AIM

Our objective is to define the phenomenon of agritourism in the light of the multiactivities of agritouristic farms, taking into account the land use. This paper proposes a pilot study in FVG that defines the situation at the end of 2009. Moreover a new statistical approach is proposed to outline the situation and help decisional processes for territorial development and planning. The employed method includes (a) the classification of the variables linked to agritouristic supply to find the main supply types (Przezborska, 2005), (b) the Principal Component Analysis (PCA) in order to classify the regional agritourisms according to their supply and (c) the Canonical Correspondence Analysis (CCA) to investigate the relationships between agritouristic supply, agricultural land use and territory. Since the CCA is widely used only in social and environmental sciences (Legendre and Legendre, 1998; Greenacre, 2010), this work represents its first application in the agribusiness field.

3. DATA AND METHODS

The paper suggests a new integrated statistical approach to evaluate the link between agritouristic supply and territory. It is based on an analysis conducted in Friuli Venezia Giulia (North-Eastern Italy) using three databases:

- ERSA (Regional Agency for Rural Development) database of agritourisms in Friuli Venezia Giulia (FVG) region, updated on April 2010: 524 registered activities in 159 municipalities and 21 environmental and agritouristic supply associated variables (Tab. 1).
- 2007 census of agricultural activities in FVG region: 680437 registered lots, classified according to municipality, land use and surface. The 162 land use classes were grouped in 9 homogeneous macroclasses (strata, Yoccoz et al., 2001). Tab. 2 reports cumulative strata surfaces on the municipalities where there are agritourisms. It was used the 2007 census instead of the last available (2009) because, while the land utilisation has remained roughly the same

between the two surveys, the first allowed to have a statement of agricultural land use much more specific, due to the change in the national method of data collection.

- From two available databases was derived a third dataset associating to FVG municipalities with agritourisms the number of these businesses, their proposed activities expressed in absolute frequency, the altitude, the land use strata coverage and the total agricultural area.

Variables linked to agritouristic supply (type S in Tab. 1) were organized in a variables - agritourisms matrix and subjected to multivariate analysis. Classification of standardized variables was obtained using the squared euclidean distance as similarity algorithm and the "single-linkage" algorithm for clustering (Przezborska, 2005). Variables standardization was made in order to make them comparable; it was obtained subtracting from each value the variable mean and dividing the result by the variable standard deviation.

The ordination was then achieved through the Principal Component Method (PCA, Podani, 2000).

The third dataset was subjected to Canonical Correspondence Analysis (CCA, Legendre and Legendre, 1998) to relate features of the agritouristic supply (variables type S in Tab. 1) to environmental variables (type E in Tab. 1 and Tab. 2) and to the territory (variable type P in Tab. 1). The ordination axes are linear combinations of the environmental variables. CCA is thus an example of direct gradient analysis, where the gradient in environmental variables is *a priori* known and the agritouristic supply (variables expressed as abundance or presence/absence) is considered to be a response to this gradient.

The statistical analysis were carried on with the software STATISTICA v. 6.0 (StatSoft Inc., 2001).

Fig. 3. Rural Development measures of the second pillar and measures activated in Friuli Venezia Giulia (FVG) region (highlighted in grey).

Articles	Axis	Focus	Measure code	Measure title
Art. 20-35	Axis 1 Competitiveness	Human capital	111	vocational training and information actions
			112	setting up of young farmers
			113	early retirement of farmers and farm workers
			114	use of advisory services by farmers and forest holders
			115	setting up of farm management, farm relief and farm advisory services
		Physical capital	121	modernisation of agricultural holdings
			122	improvement of the economic value of forests
			123	adding value to agricultural and forestry products
			124	cooperation for development of new products, processes and technologies
			125	infrastructure related to the development and adaptation of agriculture and forestry
			126	restoring agricultural production potential damaged by natural disasters
		Quality	131	meeting standards based on Community legislation
			132	participation of farmers in food quality schemes
			133	information and promotion activities
Art. 36-51	Axis 2 Improving the environment and the countryside	Sustainable agricultural use	211	natural handicap payments to farmers in mountain areas
			212	payments to farmers in areas with handicaps, other than mountain areas
			213	Natura 2000 payments and payments linked to Directive 2000/60/EC
			214	agro-environment payments
			215	animal welfare payments
			216	support for non-productive (agricultural) investments
		Sustainable use of forestry	221	first afforestation of agricultural land grant and premium scheme
			222	first establishment of agroforestry systems on agricultural land
			223	afforestation of non-agricultural land
			224	Natura 2000 payments
			225	forest-environment payments
			226	restoring forestry potential and introducing prevention actions
			227	support for non-productive investments
Art. 52-60	Axis 3 The quality of life in rural areas and diversification of the rural economy	Economic development	311	diversification into non-agricultural activities
			312	creation and development of microenterprises to promote economic development
			313	encouragement of tourism and developing the economic fabric
		Quality of life	321	basic services for rural population and economy
			322	village renewal and development
			323	conservation and upgrading of rural heritage
		Human capital	331	training and information measures for economic actors operating in the fields covered by axis 3
			341	skills acquisition, animation and implementation
Art. 61-65	Axis 4 LEADER	Implementation of local development strategies through the selection of Local Action Groups (LAGs)	411	implementation of local development strategies, competitiveness
			412	implementation of local development strategies, environment/land
			413	implementation of local development strategies, quality of life and diversification
			421	interterritorial and transnational cooperation
			431	running the local action groups, acquisition of skills and animation

Source: EC Reg. 1698/2005 and Rural Development Program of FVG (Friuli Venezia Giulia Region, 2009).

Tab. 1. Environmental (E) and agritouristic supply associated (S) variables in ERSA database. The variable Agritourism ID is a counter (C), the variable "Municipality" indicates the position (P) of the agritourism in the territory.

Variable	Variable label	Type of variable	Measurement scale
Agritourism ID	id	C	Integer counter
Municipality	MUN	P	Nominal
Municipal altitude	ALT	E	Ordinal (3 classes: value 0 if >=300m, 1 if >300m and <=500m, 2 if >500m)
Mountain municipality	MOU	E	Ordinal (3 classes: value 0 if false, 1 if partially mountain, 2 if true)
Accommodation class	acl	S	Ordinal (5 classes with values from 1 to 5 depending on the quality of the accommodation according to the regional law 25/1996)
Agricamping	agr	S	Binary (Y/N)
Number of apartments and one-room flats	naf	S	Rational-Discrete (#)
Number of bedrooms	nbe	S	Rational-Discrete (#)
Cold meal covers	cmc	S	Rational-Discrete (#)
Cold meals	cme	S	Binary (Y/N)
Cultural activities	cac	S	Binary (Y/N)
Exhibitions	exh	S	Binary (Y/N)
Hot meal covers	hmc	S	Rational-Discrete (#)
Hot meals	hme	S	Binary (Y/N)
Mountain hut	mhu	S	Binary (Y/N)
Organic farm	ofa	S	Binary (Y/N)
Own product sale	ops	S	Binary (Y/N)
Number of pitches	npi	S	Rational-Discrete (#)
Recreational activities	rac	S	Binary (Y/N)
Sport	spo	S	Binary (Y/N)
Total beds in rooms	tbr	S	Rational-Discrete (#)
Total beds in apartments and one-room flats	tba	S	Rational-Discrete (#)
Other activities	oac	S	Binary (Y/N)

Source: own elaboration from ERSA database.

Tab. 2. Land use stratification.

STRATA	Strata label	Type of variable	Surface (ha) in municipalities with agritourism	Surface (ha) in FVG
Cereals and other sowable lands	CSL	E	220577,84	269326,68
Flori- and horti-culture	FHC	E	2599,22	3079,97
Free soil	FSO	E	7517,48	9215,96
Orchard	ORC	E	1321,15	1473,81
Other woody, multi-year or permanent crops	OPC	E	3046,27	3471,41
Pasture	PAS	E	21181,93	27924,21
Vineyard and olive grove	VOG	E	10817,22	11717,38
Wood	WOO	E	8951,64	10419,75
Other uses	OTH	E	8366,22	11260,14
Total agricoltural area	TAA	E	284378,97	347889,31

Source: own elaboration from 2007 census of agricultural activities in FVG.

4. RESULTS AND DISCUSSION

4.1. The dendrogram of agritouristic supply variables

The dendrogram of variables (

Fig. 4) shows four main clusters, corresponding to three typologies:

A: accommodation supply; it can be subdivided into three sub-clusters on the basis of its comfort: rooms, camping sites, apartments and one-room flats;

LT: leisure time activities (sport, recreational or cultural activities, exhibitions);

HC and CC: respectively hot and cold catering supply.

Four variables (mountain hut, organic farm, own product sale, other activities) are excluded and are not correlated to the proposed framework. They will be therefore investigated with PCA.

4.2. Principal Component Analysis (PCA)

The reciprocal ordination of supply variables and agritourisms is represented in Fig. 5 and explains a total variance of 35.46%. The first axis is positively correlated to proposed leisure time activities; it is directly correlated to involvement required to the visitors in the proposed agritouristic activities. The second axis is positively correlated to variables linked to accommodation supply and negatively to consumption of quick and cold meals; it is also related to visitor stay time. The ordination clearly separates three agritouristic supply typologies: it identifies the previously defined variables clusters related to accommodation (A) and leisure time (LT) and merges the clusters HC e CC into a single (C) linked to catering. In this analysis, variables “own product sale” and “organic farm” are positioned at the ordination centre, showing their transversality with respect to the three clusters. It must be clarified the meaning of variables “mountain hut” and “other activities”, whose positions are probably due to their peculiar features. Each agritourism was classified on the basis of the cluster affiliation of the nearest variable in the ordination; for this evaluation it was used the euclidean distance between activity- and variable-point. The agritourisms can be divided into four clusters. The first three are respectively linked to:

- Accommodation: 94 registered businesses (RG);
- Catering: 123 RG;
- Leisure time activities: 17 RG.

The remaining 290 activities are not clearly classifiable because of their position in the middle of the clusters A, LT and C.

Fig. 4. Dendrogram of agritouristic supply associated variables. Three main agritouristic supply typologies: accommodation (A), leisure time (LT) and catering (hot, HC and cold, CC).

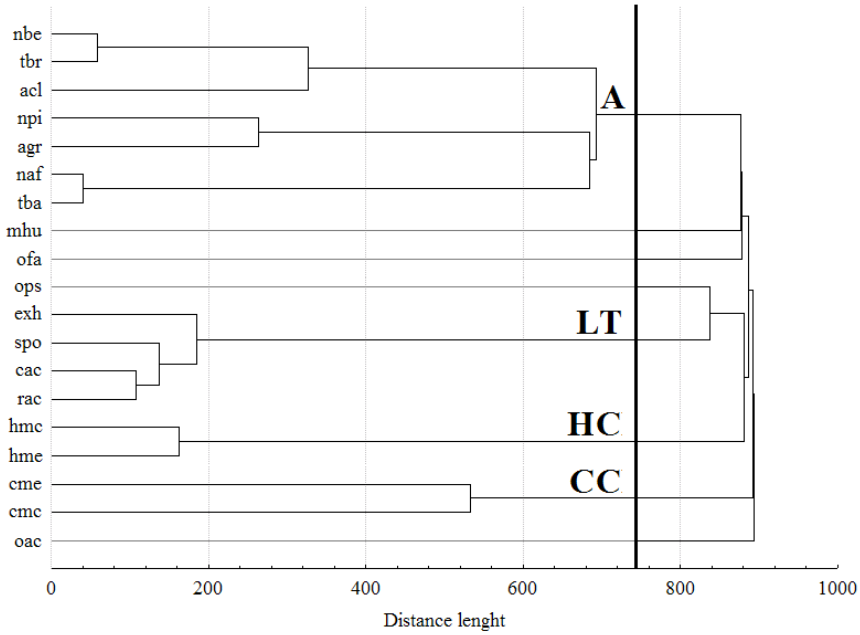
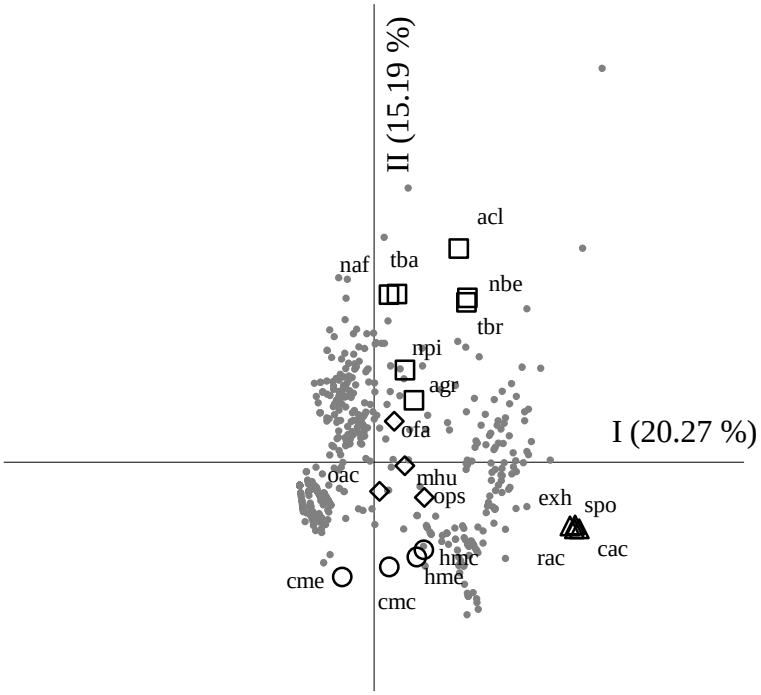


Fig. 5. Reciprocal ordination of supply variables (empty markers) and agritourisms (grey points). Variables were classified according agritouristic supply typology: accommodation (empty squares), leisure time (empty triangles), catering (empty circles), other (empty rhombi).



4.3. Canonical Correspondence Analysis (CCA)

A permutation test was made in order to verify the linear relationship between explanatory (land use) and dependent variables (agritouristic supply), which is the assumption of CCA (Makarenkov and Legendre, 2002). The test concludes that the data are linearly related with a p-value < 0.0001.

Reciprocal ordination of land use, variables linked to agritouristic supply and municipalities explains a total variance of 69.73% (Fig. 6). The first axis defines an altitudinal gradient: it is positively correlated to high altitude pastures and negatively to large areas of arable land. The second axis arranges the strata according to their impact on the territory; consequently, it is associated to anthropic impact. It is positively correlated to high "naturality" environments, such as woods and perpetual meadows, and negatively to greater impact land uses, such as horti-, floricultures and agricultural areas
devoted to farm buildings or farm viability ("Other uses").

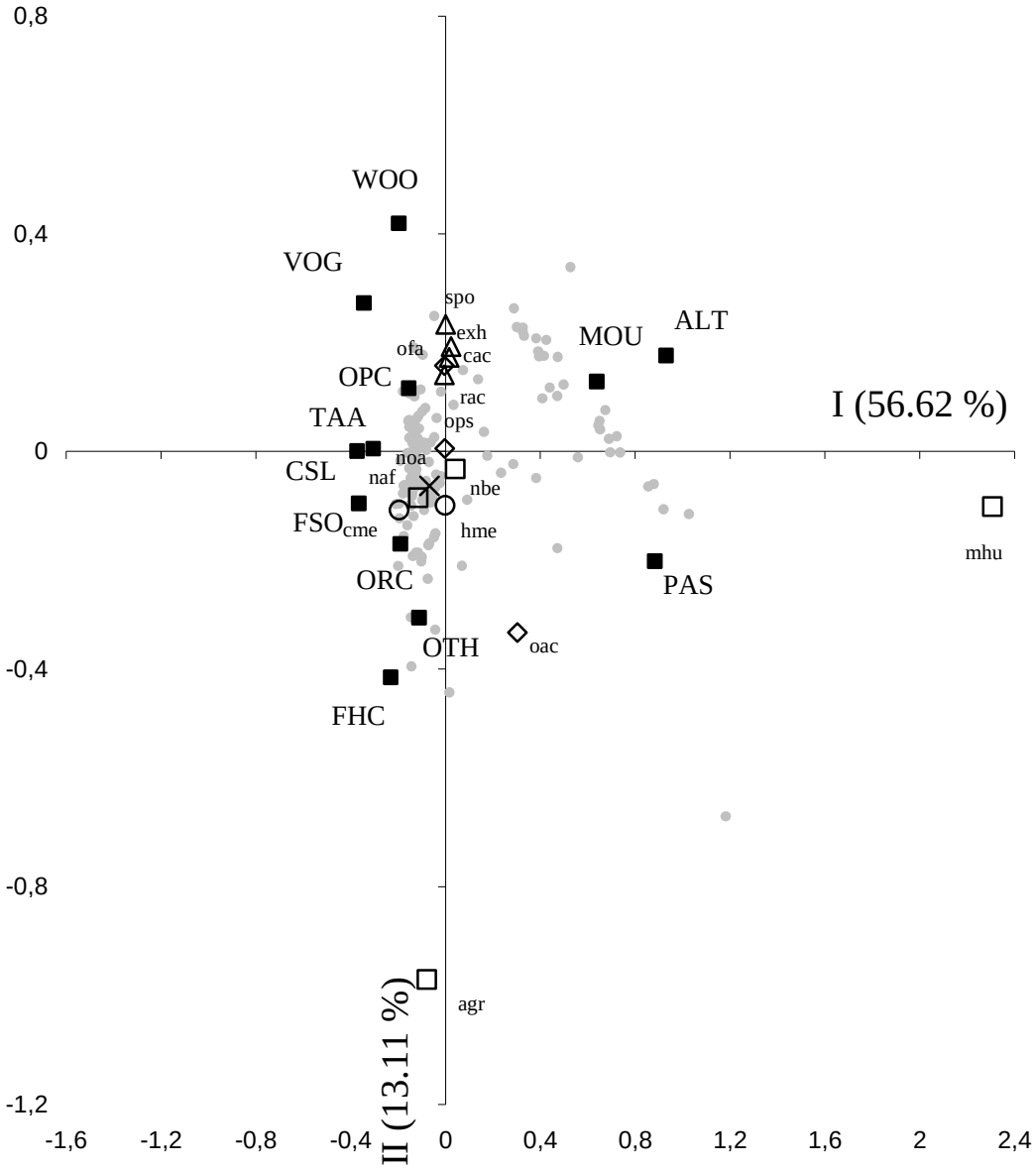
Strata with low impact and high "naturality" are:

- Woods and permanent meadows located on the upper part of the region;
- Vineyards and olive groves mainly concentrated in the hills on the eastern border. These are completely integrated into the regional landscape as a consequence of their secular introduction into the territory.

The cultivation methods in all these strata are fully eco-compatible. Land uses with medium impact are cereals and other sowable lands that are the most common crops in FVG due to low friulian plain land suitability and to the previous public support policies. The wide coverage of this stratum on the territory is highlighted in Fig. 6 by the proximity of the variables "Cereals and other sowable lands" (CSL) and "Total agricultural area" (TAA). Strata with high impact are:

- Orchard: the plantings are almost exclusively located in plain and the agronomic techniques currently used are outdated and poorly eco-sustainable. The farms are reluctant to diversify processes, products and services;
- Pastures: grazing is one of the causes of land degradation in the mountain areas (Lange, 1969);
- Flori- and horticultures have a high impact on the territory because involve the construction of greenhouses for growing plants;
- Others uses of agricultural areas ("Other uses", OTH) e.g. devoted to farm building, farm viability.

Fig. 6. Reciprocal ordination of land use strata (black squares), variables linked to agritouristic supply (empty markers) and municipalities (grey points). Variables linked to agritouristic supply were classified according PCA in Fig. 5: linked to accommodation (empty squares), leisure time (empty triangles), catering (empty circles), other (empty rhombi). It was also plotted another variable linked to agritouristic supply, called "Number of agritourism for each municipality" (label "noa", black cross).

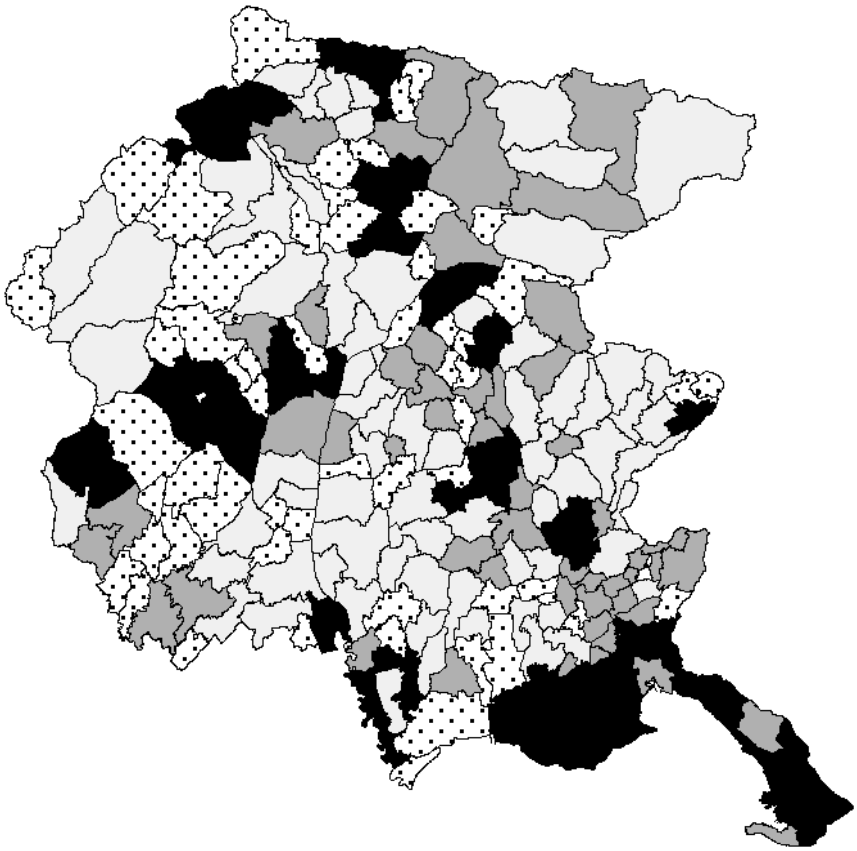


Agritouristic supply variables linked to sport and recreational activities are located in higher "naturality" environments, as well as organic farms and own product sale. Mountain huts are obviously related to high-altitude pastures. Environments with high anthropic impact (flori-

and horticulture) are associated with agricamping supply; in FVG this phenomenon is typical of tourist towns along the coastline. Catering and accommodation supplies are the most common in the region since their associated variables in the CCA-ordination are near to the variable "Number of agritourism for each municipality" (noa); they are placed transversely with respect to land uses.

The map in Fig. 7 illustrates the FVG municipalities classified in three clusters according to their anthropic impact degree (obtained from their Y-coordinate in CCA graph, Tab. 3).

Fig. 7. Municipalities classified according anthropic impact degree (obtained from CCA graph in Fig. 6). Three levels: low (light grey, 71 municipalities), medium (grey, 52) and high (black, 36). Municipalities without agritourisms are indicated with dotted areas (60).



Tab. 3. Municipalities coordinates on the CCA ordination (I on the first axis, II on the second axis) and their associated anthropic impact degree (AI): low (L), medium (M), high (H).

Municipality	I	II	AI	Municipality	I	II	AI
PALUZZA	1,18	-0,67	H	CHIOPRIS-VISCONE	-0,16	-0,07	M
MONTEREALE VALCELLINA	0,02	-0,44	H	TURRIACO	-0,13	-0,07	M
SAN CANZIAN D'ISONZO	-0,14	-0,40	H	PAULARO	0,86	-0,06	M
GRADO	-0,04	-0,33	H	SAN FLORIANO DEL COLLIO	-0,18	-0,06	M
FIUMICELLO	-0,15	-0,31	H	TAIPANA	-0,15	-0,06	M
LATISANA	-0,07	-0,23	H	MOIMACCO	-0,17	-0,06	M
TERZO D'AQUILEIA	-0,20	-0,21	H	MALBORGHETTO-VALBRUNA	0,88	-0,06	M
BUDOIA	0,07	-0,21	H	VILLESSE	-0,14	-0,06	M
PALAZZOLO DELLO STELLA	-0,10	-0,20	H	TRICESIMO	-0,11	-0,06	M
MONRUPINO	-0,10	-0,19	H	COLLOREDO DI M. ALBANO	-0,02	-0,06	M
AQUILEIA	-0,14	-0,19	H	GRADISCA D'ISONZO	-0,14	-0,06	M
CAVAZZO CARNICO	-0,12	-0,19	H	MONFALCONE	-0,14	-0,06	M
SEQUALS	-0,12	-0,19	H	TAVAGNACCO	-0,14	-0,05	M
TOLMEZZO	0,47	-0,18	H	GORIZIA	-0,08	-0,05	M
TRAVESIO	-0,07	-0,17	H	MUGGIA	-0,14	-0,05	M
SAN GIOVANNI AL NATIS.	-0,20	-0,17	H	SAN VITO DI FAGAGNA	-0,15	-0,05	M
MANIAGO	-0,07	-0,17	H	CLAUZETTO	0,38	-0,05	M
RONCHI DEI LEGIONARI	-0,05	-0,16	H	MARIANO DEL FRIULI	-0,15	-0,05	M
UDINE	-0,18	-0,16	H	MAJANO	-0,02	-0,05	M
DUINO-AURISINA	-0,04	-0,15	H	MORARO	-0,14	-0,04	M
MORSANO AL TAGLIAMENTO	-0,16	-0,14	H	SPILIMBERGO	-0,13	-0,04	M
MANZANO	-0,19	-0,12	H	BUIA	-0,04	-0,04	M
DOBERDO' DEL LAGO	-0,13	-0,12	H	ARTA TERME	0,23	-0,04	M
PRATO CARNICO	1,03	-0,12	H	SACILE	-0,14	-0,04	M
CAMPOFORMIDO	-0,09	-0,11	H	MORTEGLIANO	-0,13	-0,04	M
SAURIS	0,92	-0,11	H	FONTANAFREDDA	-0,12	-0,03	M
TARCENTO	-0,14	-0,10	H	DIGNANO	-0,15	-0,03	M
STREGNA	-0,15	-0,10	H	VILLA VICENTINA	-0,14	-0,03	M
SAN DORLIGO DELLA VALLE	-0,21	-0,10	H	ROMANS D'ISONZO	-0,14	-0,03	M
VIVARO	-0,19	-0,10	H	MEDEA	-0,13	-0,03	M
GEMONA DEL FRIULI	-0,06	-0,09	H	VENZONE	0,29	-0,02	M
FOGLIANO REDIPUGLIA	-0,06	-0,09	H	SAN VITO AL TORRE	-0,14	-0,02	M
TRIESTE	-0,09	-0,09	H	MORUZZO	-0,07	-0,02	M
STARANZANO	-0,10	-0,09	H	CORNO DI ROSAZZO	-0,14	-0,02	M
POLCENIGO	0,09	-0,09	H	PASIANO DI PORDENONE	-0,19	-0,02	M
PINZANO AL TAGLIAMENTO	-0,06	-0,08	H	SAN PIER D'ISONZO	-0,12	-0,01	M
RONCHIS	-0,14	-0,08	M	MOGGIO UDINESE	0,56	-0,01	M
REANA DEL ROIALE	-0,09	-0,08	M	SGONICO	0,18	-0,01	M
CAPRIVA DEL FRIULI	-0,18	-0,08	M	ATTIMIS	-0,13	-0,01	M
MOSSA	-0,14	-0,08	M	PRADAMANO	-0,16	0,00	M
MEDUNO	-0,06	-0,07	M	OVARO	0,74	0,00	M
AZZANO DECIMO	-0,15	-0,07	M	BICINICCO	-0,15	0,00	M
SAGRADO	-0,09	-0,07	M	CHIUSAFORTE	0,70	0,00	M
PAVIA DI UDINE	-0,15	-0,07	M	SAN DANIELE DEL FRIULI	-0,08	0,00	L
CARLINO	-0,04	-0,07	M	RAGOGNA	-0,12	0,00	L

Tab. 3 follows in the next page.

Municipality	I	II	AI	Municipality	I	II	AI
BAGNARIA ARSA	-0,11	0,01	L	MARTIGNACCO	-0,11	0,06	L
SESTO AL REGHENA	-0,09	0,01	L	PRECENICCO	-0,10	0,07	L
DOLEGNA DEL COLLIO	-0,13	0,01	L	TARVISIO	0,67	0,08	L
CERVIGNANO DEL FRIULI	-0,11	0,01	L	CORMONS	-0,09	0,08	L
PORPETTO	-0,13	0,01	L	MONTENARS	0,03	0,09	L
POCENIA	-0,08	0,01	L	CERCIVENTO	0,41	0,10	L
POZZUOLO DEL FRIULI	-0,14	0,02	L	FAEDIS	-0,13	0,10	L
CASTIONS DI STRADA	-0,09	0,02	L	SAVOGNA	0,47	0,10	L
MUZZANA DEL TURGNANO	-0,14	0,02	L	ZOPPOLA	-0,15	0,11	L
POVOLETTO	-0,06	0,02	L	PREPOTTO	-0,15	0,11	L
REMANZACCO	-0,14	0,02	L	LESTIZZA	-0,02	0,11	L
RAVASCLETTO	0,69	0,02	L	SEDEGLIANO	-0,18	0,11	L
AIELLO DEL FRIULI	-0,12	0,02	L	CODROIPO	-0,11	0,11	L
SANTA MARIA LA LONGA	-0,15	0,02	L	COMEGLIANS	0,44	0,12	L
RUDA	-0,14	0,02	L	SUTRIO	0,50	0,12	L
NIMIS	-0,15	0,03	L	SAN LEONARDO	0,14	0,13	L
RIVE D'ARCANO	-0,05	0,03	L	SAN PIETRO AL NATISONE	0,07	0,15	L
PREMARIACCO	-0,14	0,03	L	CLAUT	0,47	0,17	L
ENEMONZO	0,72	0,03	L	RESIA	0,40	0,17	L
FIUME VENETO	-0,13	0,03	L	TRASAGHIS	0,41	0,18	L
PULFERO	0,16	0,04	L	CIVIDALE DEL FRIULI	-0,10	0,18	L
VARMO	-0,14	0,04	L	RAVEO	0,39	0,18	L
SOCCHIEVE	0,65	0,04	L	SAN VITO AL TAGLIAMENTO	-0,13	0,19	L
BERTIOLO	-0,13	0,04	L	SAN GIORGIO DELLA RICHI.	-0,13	0,19	L
TORREANO	-0,11	0,04	L	SAN MARTINO AL TAGLIAM.	-0,13	0,19	L
FARRA D'ISONZO	-0,14	0,04	L	RIGOLATO	0,42	0,21	L
BASILIANO	-0,15	0,04	L	FORGARIA NEL FRIULI	0,38	0,21	L
BUTTRIO	-0,13	0,05	L	DOGNA	0,33	0,21	L
AMPEZZO	0,64	0,05	L	VITO D'ASIO	0,33	0,22	L
TRIVIGNANO UDINESE	-0,14	0,05	L	BARCIS	0,33	0,23	L
COSEANO	-0,16	0,06	L	CIMOLAIS	0,30	0,23	L
PONTEBBA	0,65	0,06	L	TALMASSONS	-0,05	0,25	L
CHIONS	-0,15	0,06	L	TRAMONTI DI SOTTO	0,29	0,26	L
CAMINO AL TAGLIAMENTO	-0,12	0,06	L	CANEVA	0,53	0,34	L
FAGAGNA	-0,04	0,06	L				

4.4. Potential effects of the Rural Development Policy 2007-2013 in FVG

We can suppose the effects of some measures of the first three axes of the Rural Development Policy 2007-2013 on the proposed CCA-ordination:

Axis 1: thanks to the support to agricultural productions with high added value, the variable “Organic farm” (ofa) should move toward an intermediate position with respect to land use and agritouristic supply. In this way the eco-sustainability of all the strata, the product quality and the food safety will increase.

Axis 2: the forestation of agricultural lands should produce a reduction of free soil and an increase of low impact strata. This should result in the ordination in a shift of the variable "Total agricultural area" (TAA) toward the upper part of the graph.

Axis 3: the diversification of the rural supply will entail the shift of position of the variable "Number of agritourism for each municipality" (noa) to another position that should be intermediate among the available agritouristic supplies.

5. CONCLUSIONS

Proposed methodology is able to provide information about the relationships among territory, land use and agritouristic businesses. It becomes particularly important during the planning phase as it provides decision makers with a means of rapid assessment, essential to enable them to choose the most appropriate intervention policies.

This study defines the situation in FVG after the implementation of the Rural Development Program 2000-2006. It should be useful to repeat the same analysis at regular intervals to assess how the situation changes, the effectiveness of the new policies and to plan the subsequent interventions.

In the future will be clarified the reasons of the distribution of the agritouristic supply on the territory. We suppose that it can depends not only on the land uses but also on the landscape features and on the distribution and age of the rural population.

It must be investigate the causes of the found anthropic impact distribution that we suppose to be potentially related to population density, to location of the main roads and to people flows.

After analyzing the agritouristic supply, another object of this research will be the investigation of demand for agritourisms, in order to find an advantageous balance for both producers and customers.

ACKNOWLEDGMENT

Our sincere thanks for the help to Dr. Filip Pošćić, PhD student at the Department of Agriculture and Environmental Sciences of the University of Udine and to Dr. Valeria Zamolo for the linguistic revision.

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