

Traditional peasant knowledge and rural landscape: empirical evidences in Southern Italy¹

Quaranta Giovanni² - Salvia Rosanna²

Nec non ea quae faciunt cultura honestiorem agrum, pleraque non solum fructuosiore eadem faciunt, ut cum in ordinem sunt consita arbusta atque oliveta, sed etiam vendibiliorem atque adiciunt ad fundi pretium. Nemo enim eadem utilitati non formosius quod est emere mavult pluris, quam si est fructuosus turpis... " (M. T. Varrone, 80 B.C. De Re Rustica 1,4 1-5)³

1. Introduction

When I was in the elementary school, my teacher asked me about the job of my parents, she reproved me when I said "peasants", and she was telling me that I have had to say "farmers". Not many years later, any farmer in Italy would like to put a label "made by peasant's farm" on its products.

Peasant, *Contadino* in Italian, take its meaning from "Contado" the extra-urban area where they use to work and live on the land, the term is the diametrical of "citizen", the city inhabitant. Historically the word refers to any workers linked to the land, not distinguishing between workers landowners and hired workers. Recently, instead, *contadino* concerns especially small production system and management of poor land, very often involving the whole family in manual activities, reserving the word "farmer" to a richer workers managing either its own land or rented land, even when he is not involved in any manual activity. As consequences, when the term indicate the role they have in the production activity, it is always used in depreciative sense. When the word *contadino* instead is related to the role they have in the modern post-urban society, it reminds values like tradition, culture, history, and auspicated lifestyle. This determines a great appreciation by the consumers, not only for their production activity, but also for their important role in safeguarding these values together with the maintenance of rural world and landscape. Since this later role, many times the figure of peasant is in contraposition to the other forms of farm management in environmental degradation process, resulting a diffuse opinion that only the traditional peasant farms are able to maintain the nice rural landscape and doing so even avoid soil degradation.

The study attempts to clarify if the new forms of farm organisation, that take place of the traditional peasant farms, are more or less sensitive to the rural landscape respect to the former, and which factors influence this attitude.

¹ The authors shared the general approach of the work, even though each paragraph has to be attributed as following: Quaranta for the 1st, 4th, 7th and 8th paragraphs, and Salvia for 2nd, 3rd, 5th and 6th paragraphs.

² University of Basilicata –Italy.

³ All the healthy method of cultivation that makes more beautiful the land, the most of the cases, not only makes increase their productive ability like it happens when olive oil and grapevines have planted in order but it makes it easier to sell and increase its price. There is nobody in fact that between two pieces of land of equal output don't prefer to buy at more elevated price what is more beautiful, rather than what it is more fertile but it is ugly.

The study starts from a brief historical analysis of the linkages among farm management and land use in southern Italy, considering also the social change in the rural areas represented, prevalently, by the de-peasantisation of the countryside. Then the main factors influencing the land use are analysed and hence some conclusion remark are driven.

2. Some historical evidence

The administrative and legislative unification of the Italian State (1861) has coincided with a historical phase in which many of the economic policy decisions undertaken have strongly conditioned the following development of the agricultural sector. Italian unification differs from Western Europe countries, for the backwardness of his economic system, fundamentally based on the agriculture, which represents around the 50% of the national income. Because the barrier reduction, the unification increased the Italian participation to the international market, where it presents itself like exporting country of agricultural products. The greater opportunity offered by the opening of the markets and the favourable international conjuncture, favour the southern agriculture: typical Mediterranean products (olive trees, citrus, vineyards) together with cereals. The later production increased by substituting pasture and woods. This process of crop expansion starts an irreversible process of man made landscape and very often phenomenon of true soil degradation.

At same time almost no agricultural investments are made, either to improve land productivity neither to increase economic land values, in fact most of saving created by the agricultural high prices and the opening of new markets, went to the acquisition of ecclesiastical assets in order to enlarge the ownership. This process together with the existence of particular agrarian pacts, real feudal residues, determines very light linkages among land owner and land as real resource that, in this environment, needs maintenance and care to preserve its fertility. The land management system differs among the topographical areas according to the human pressure. So, especially for southern Italy, the land workers were concentrated mainly in mountain areas, where very often the land available per unit was less than half hectare, determining a very good maintenance of the whole territory, and labour intensive cropping systems (arboreal cultivation, livestock production).

Common character to all the zones was the lack of interests in agricultural investments both by the owners, which prefer other sectors, and tenants, which are discouraged by the very short duration of the rents (usually not more than six years).

With the advent of the fascism, and the autarchy imposition, gave a strong impulse to the cereal production, reducing the remaining pasture and woods. At same time, the export barriers imposed a reduction also in the arboreal crops, strongly reducing their potential support to the economy.

In the immediate post-war period, in an economic disastrous situation with a great predominance of very large and non productive farms, was absolutely necessary to modify the agrarian contracts and promote the agrarian trying to push the southern economy. The laws on the agrarian reform, sharing the big farms, directly and indirectly created many peasant farms (even though, very often, not economically sufficient) and, foremost had the effect of relieve the social tension. These new forms of farm organisations based their activity mainly on the labour-intensive crops, and since they could account on the property of land they started to consider the land not only as production tool but also as an assets to

be saved and ameliorate. This socio-cultural change have had many positive effects on the landscape of many areas.

The strong development based on the heavy industry, prevalently located in the Northern Italy, causes diffused phenomenon of exodus, baiting an unstoppable process of demographic impoverishment especially in the social southern context. Start the idea that the agriculture is a secondary activity and the new generations see, first in the industry and then in the service sector, the occasions of much more gratifying job both from the point of view of the remuneration and at social level. This phenomenon, obviously, is felt very strong in the small farms that are not able to absorb the whole family labour and the female labour starts to engage a primary role, while male labour is, in prevalence, absorbed by the other economic sectors.

The Italian agriculture, on the other hand, is not able to achieve the restructuring occasions promoted by the European Community. Both the large and the small farms orient themselves toward production systems highly specialised, cereals and intensive breeding prevalently, that are the sectors toward which UE addresses a substantial price support. This phenomenon induces huge repercussions on the territory, with evident differences between geographical areas differently suitable and among structural different farms. This production model, in fact, characterised by homogeneous production techniques, become important also in the Southern Italy interesting prevalently the big farms substituting crops like citrus, olive trees, vineyards for which these areas are mostly suitable, conducting to evident repercussions on the territory and on his stability. To the contrary the small peasant farms continue to produce less extensively more traditional labour intensive crops strictly related to the agro-climate type with evident positive repercussions on the landscape.

In substance the agricultural policies promoted by the UE before the 90's is characterised by the promotion of labour saving crops and, therefore, they determine a contraction of the labour employed in agriculture and, accordingly, they strongly reduce the maintenance of the territory, impoverishing the landscape.

With the Mac Sharry reform (year 1992) first and with Agenda 2000 then (year 1999), it starts to delineate a new type of agricultural development that individualises in the "multifunction" of the productive agricultural process the key of the agricultural development.

From this brief consideration would appear the small peasant farm as the only form of land management able to preserve a sustainable landscape. However are there also other factors inducing this valuable attitude? Or better, is the relation between who work on the land and its owner the key factor of land use and hence of land aspects, or other external elements are involved. It is interesting, therefore to go deeply and analyse if other factors influencing the farm behaviour concerning the landscape and rural environment exist.

3. Social components and social consequence

As consequence of the historical pattern in the last years the social structure of the rural areas in Southern Italy has suffered of deep transformations. Progressively is growing the idea that the rural space is a place in which is possible achieve a standard of life equal or straight superior to the urban life. Protagonists of this rediscovery are, above all, the social classes with elevated income that at first have elected the country as centre for the secondary residence and, subsequently, they have preferred it as a place where it is possible to live permanently.

Another phenomenon, also, seems to characterise this new phase respect to the past. While in the past the farmers influenced the rural territory in substantial manner because the agriculture represented the economic prevailing activity, now, on the same rural space, a plurality of project ideas coexists like expression of different groups of interest. The necessity to make plan accounting for the objectives, considering all the territory's aspects, brought out the fact that the rural world competes not only to the farmer with their productive choices or their behaviour, more or less responsible in the environmental sense, but also to the convergence and the relationships established between the economic sectors. A unitary strategy of development could represent a good tool for the social-economic revitalisation of the rural context in which, probably, all the energies has canalised in the same direction. At same time the decisional action expressed by the different levels of local administration in synergy with the new management of the territory is important too.

It is evident that the decentralisation of the public administration has assigned to the local political leadership a role really conclusive for the destiny of the territory. The new EU bottom up approach in planning action, has radically changed the definition of the strategies for the local development. The necessity to act in partnership, considering, at the same time, the demands of the different actors of the development, evaluating the local specificity and the local potentialities, even in presence of strong limits, represents a qualitative jump respect to the past and it can represent a stimulating occasion to recuperate the own identity and the possibility to be essential for the destiny of the own territory.

The awareness to be able to contribute decisively to the development of the own territory seems the most important phenomenon interesting the rural areas due to the effects it causes on the socio-economic context. The protagonists are, essentially, the subjects that live on the rural territory, first of all the farmers, and the distinctive aspects of this phenomenon could be represented by the rediscovery of local culture expression of values, of traditions, of productive processes strongly connected to the territory. This process, recently, is strongly encouraged by the European Union which has individualised it like a possible strategy to subtract a substantial part of the own rural territory to the logic of the competition determined by the increasing liberalisation of the markets. The richest farmers or the farms conducted by family that have the possibility to establish contacts with the external world (administrative level, research level, structures of technical assistance, etc.) are become the first supporters of this new approach. The smallest farms, marginal from the point of view of the resources they use or for the demographic characteristics of the families that conduct them, at least in the initial phase, remained apart from this process. It is reasonable to suppose that this change in the scenario of reference will carry to an another selection of the farms allowing the survival of those able to adapt and implement the new rules coming from the external context.

One of the fundamental characteristics of this process is the linkage between products and territory: through the product the territory is promoted and vice versa. Obviously this behaviour is a marketing operation finalised to promote the production taking it away from the logic of the market competition. It is, also, possible to recognise a kind of "ransom" of the country culture that, for years, has suffered the pressure of the urban one. The re-appropriation of the country identity is one of the more evident effects of the described process. Since many year ago, who lived in the country and had relationship with the land, was considered out from the "civil world" or from the progress in strict sense. As consequence who lived this "impasse" wanted to belong to the urban world and one of the

possibility was provided by off-agricultural work through which, definitely, it belong to the city. As result derives that the re-appropriation of the country culture is an “authentic operation” only if it comes from someone belonging to the city. In other words, if it comes from who has metabolised the rules and the values of the urban world and return now, with real awareness and critical sense, to the country world reinterpreting the ways and the expressions, avoiding the pure folklore.

Another extremely important consequence can be recognised in the new consumers’ image of an agriculture practised with traditional methods and environment respectful. Is also diffused a certain worry about the quality of the agricultural productions, emphasised by the always frequent cases of consequences of productive intensive processes (see “crazy cow”). An agriculture strongly involved in the maintenance of territory (idro-geological stability) and responsible of a revitalisation of the demographic profile can represents a good justification to the support that the European Union continues to destine to this sector.

4. *The hypothesis*

It seems clear that the landscape expresses the synthesis of the interactions between the different operators in the same space and it is modelled by the socio-economic dynamic realised on it.

In the rural areas, where the agriculture still has a prevalent role in economic terms, big responsibility in maintaining the landscape is attributed to the "farmers." It become fundamental, therefore, to know the main variables able to condition the choices operated by these figures in terms of land use and utilisation of the territory in general. The name "farmers," in reality, defines a series of relationships between management and ownership of the resources, which could have great importance in the studies on the preservation of the environment. In the U.E., during the last decades, these relationships have changed, carrying out the consolidation of two main types of farm organisation: the capitalistic farms and the family-farms. As it is known, the first is a farm managed very much as a typical industrial firm, where the entrepreneur buy on the market all the necessary inputs (included the land or the use of it) and sell all the economic outputs. These farms, that represent a very small part of the total European farms, usually manage large amount of land and their behaviour is, strictly, guided by the maximisation of farm profit. In this case the maintenance of territory is an explicit cost (and such as it must be taken as low as possible) of production. The prevailing form of farm organisation in Europe and in many countries all around the world is, instead, a typical family-farm, which, very often, owns the land and where the family components mainly work into the farm or, non rarely, outside. Among the family-farms we can distinguish (Ellis 1992) a peasant farm and a more modern family-farm, also called part-time family-farm or pluri-active family-farm. The latest is completely integrated in the inputs and outputs markets, especially in the labour market, where it participate as supplier and as demander. Many family-farms belonging to this typology, in fact, have components working in other sectors, while the agricultural activity represents just income integration. To the contrary, the traditional peasant farm is a family-farm only partially integrated in the markets. In this case the decision to work only into the farm depends both by the characteristics of the family components (age, sex, education level, etc) and by labour market condition (demand side).

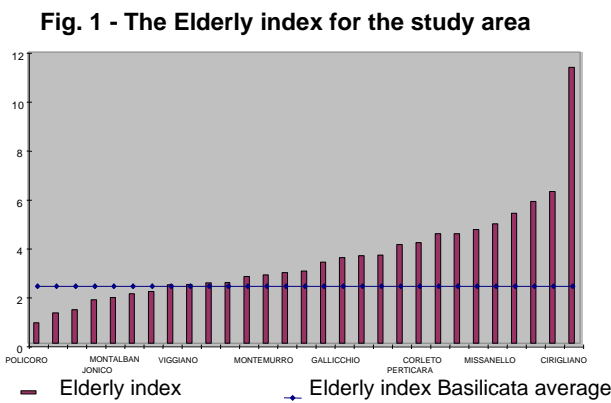
The small dimension and the low quantity of capital per work-units typically associated to the peasant farm, strongly influence its productive choices, pushing them to intensive

cropping system and labour intensive activities. The family-farms completely integrated in the market usually adopt cropping systems characterised by intensive use of capital and more extensive use of labour. These two prevailing forms are in a kind of dynamic equilibrium, influenced by the economic and demographic characteristics of the family and, above all, by the characteristics of the context, i.e. by the possibilities, for the members of the family, to find occupation in the local labour market.

5. The study area⁴

The study has been conducted in Basilicata, a small region of Southern Italy, in an area about 1,700 km², representing the 20% of the regional territory. This area has been interested by many research activities financed by the Environment Division of the U.E. (DGXII)⁵.

This area can easily be divided into three homogenous sub-areas, both from a physical-environmental and agronomic point of view, and from a socio-economic and demographic characteristics one, as well as the production activity performed: coming from the mountain to the sea the upper, the middle and lower valley. According to the last Population Census (1991) the number of resident units in the area was about 100,000. In the last forty years the population of the area as a whole was almost constant, but the dynamics of the three areas has been very different. In fact, residents have decreased in the middle valley bringing the population to 32 per Km², while they have increased in the lower valley up to 72 per Km², even though these values remain much less than the Italian value (190). The most important factor determining this pattern is the migration phenomena which has interested the total area. Both intra-Basin, from middle and upper valley to lower, and extra-regional movements have contributed to create the present situation. Many municipalities, in fact, have reduced their population by half it was forty years ago, and some others doubled their residents. An other consequence of these population movements, is the demographic fragility and impoverishment that is very serious for a large part of the study area. Taking as an example the elderly index, calculated



as the ratio between the resident population over 65 years old and the population under 6 years old, we can find many villages made up only by old pensioned people (see Fig. 1).

In fact, this index goes from an extreme of more than 1.000 to less than 100 in the lower valley.

The economic fragility of the area is also confirmed by the fact that the primary sector absorbs around one third of the total

working population, value decidedly remarkable and four times higher than the correspondent national value.

⁴ The 5th, 6th and 7th paragraphs retake some consideration already expressed in the paper (Quaranta - Salvia, 1999).

⁵ Among the others: Medalus and Medimont projects.

The most substantial fraction of the active population (43%) works in the services, that for the area mean public servants. The last General Agricultural Census (1990) identifies 15,520 farms, which were almost as much as ten years before. These farms conduct 173,300 hectares of cropping area, with an average size of 11 hectares. The distribution of land by size illustrates a typical poor agriculture structure: in fact the two thirds of the farmers manage farms having an average size around 2.5 hectares.

It emerges, in this way, a reality marked by a deep structural dualism that has not showed any change in the course of the last fifty years and no intervention of Agricultural Policy has succeeded to modify. The farms less than two hectares represent, however, an important element of the area as well as for many other places in Italy. They represent the demonstration of both an inverted exodus that for many years have induced the people to prefer the rural areas to the urban areas and cultural heritage on the possession of land⁶.

The quality of the resources, both environmental and human, available in this area allows, almost exclusively, a marginal traditional agriculture. Agri-environmental conditions are such that the safeguard of the landscape strictly coincides with the maintenance of the agricultural activity. In fact, the zone has a delicate environmental equilibrium, almost deprived of natural vegetation, where the presence of the man causes positive effects on the landscape when the use of the resources is rather extensive. To the contrary, a too much intensive use of the resources that in this area coincides with grain cultivation translates in negative effects on the environment and on the landscape.

6. Data and methodology

Since the available data from the official statistics are not sufficient to answer the objective of the study, it has been essential to collect information directly by the family-farms. A representative sample of family-farms has been selected. From the total, for the reasons above mentioned, the farms that have total agricultural land less than 2 hectares have not been considered. Since the limited variability of the population regards to the structural parameters of the farms and regards the demographic characteristics of the families, from the statistical point of view can be considered sufficient a sample dimension of 1.5-2% of the whole population.

The sample, randomly selected, is constituted by 154 family-farms. The agricultural land, managed by the farm directly inquired, usually not irrigated, destined for the 70% to cereal production, while pasture and arboreal crops utilise the rest of land. The arboreal crops more representative are olive-trees vineyard and citrus. Therefore crops that can be considered fundamental to safeguard the landscape of that area and the environment interest less than 50% of the whole sampled agricultural land. More than half of the inquired family-farms practice goats, sheep and cattle breeding.

As for the total farm population the farmers of the sample are prevalently male, of middle age to around 50 years, with a level of formal school of 7 years and their families have usually 4 components.

The family-farms of the sample have been then grouped in homogeneous groups, using the technique of the cluster analysis.

In order to classify the family-farms the variables that define the relationships between labour, management and ownership of the land, have been chosen as discriminating variables. The procedure identifies rather clearly two typologies of prevailing family-farms

⁶ The phenomenon, for its evident implication on economic, social and environmental conditions, needs much more attention and would require a specific study.

in the study area: the typical peasant family farm and the family farm that we can define not peasant. The first family typology, in fact, is little integrated in the labour market and lives prevalently in the farm. The second, instead, is tightly connected to the labour market from both sides: supply and demand. The farm, in fact, hire labour for agricultural activity and sell part of the own labour force in other sectors.

7. Analysis of the results

Investigating on the elements could influence the farmer's decisions regards to the management of the territory, a retrospective analysis, of historical farm behaviour (averages of the last years) on land use by the two main farm typologies have been performed. This in order to asses the attitude towards the landscape not only as regards to the new tendencies emerged in the last years (influenced by the European Union Policies), but as usually behaviour characterising the agricultural activity of these farms. To such purpose, for each farm, a specific index has been elaborate: LCI (Landscape crop index). This index is constructed as ratio between the land destined to crops whose cultivation causes positive effects on the environment and on the rural landscape and the total farm's land:

$$LCI = \frac{\text{Woodland} + \text{meadows and pasture land} + \text{vineyards} + \text{olive trees}}{\text{total agricultural land}}$$

This index includes values from zero (maximum negative effect) to one (maximum positive effect).

The unequivocal landscape value beyond the advantages caused on the stability of the soil have brought to include the wood, the pastures and the permanent meadows between the land use having a positive effect. The vineyards and the olives trees have considered, instead, because they are the most typical expression of the Mediterranean landscape and because their cultivation causes a low impact on the land.

It is possible to compare, then looking the LCI index farm behaviours respectful of the landscape and of the environment in both the homogeneous groups of family-farms. The index shown a mean value equal to 0,3 for both groups.

Looking at more recent years, when the CAP became fundamental to lead the farm choices, the two groups of farms shows results according to which the family-farms not peasant have made a better adhesion, in terms of total land involved, to the agro-environmental measures (Reg's EEC 2078/92⁷ and 2080/92⁸).

⁷ The Reg. (EC) No. 2078/92 constitutes a form of voluntary and conditioned support in base to which the producers sells some rights on the custom of the natural resources in change of a compensation for a lack of income.

Measures of Reg.(EC) No. 2078/92:

A Sensitive reduction of chemicals and fertilisers, maintenance of the reductions already effected, introduction of the methods of organic agriculture;

B Promoting or maintenance of the extensive production already on its way;

C Reduction of the density of the bovine and ovine per hectare;

D Employs of other echo-compatible methods, care of the rural space and of the landscape, breeding of animal kind in by of extinction;

E Care of the agricultural and forests land abandoned;

F Long stay (20 years) Set-aside

G Correct management of the land for public and recreational use

The apparent anomaly of this result resides on the fact that doesn't confirm the role, for a long time accredited only to the peasant family-farm as unique type of farm organisation that take care and safeguard the rural landscape.

The coincidence between farm centre and house of the family as well as the presence of labour surplus respect to the farm needs that can be used in "maintenance" of the territory, have always considered the peasant farm as having a favourable effect on the rural landscape.

It seems reasonable, interpreting this result as a better information available to the families that are well integrated and work in other sectors. At the same time this result can derive also from the mostly extensive character of the agriculture operated by this type of farms that better fit their needs.

This result, therefore, has brought clearly in evidence that the type of management of the farm could not be considered as the key variable, able to explain the attitude towards the landscape problems but there will be other factors able to drive the farm decisions. This consideration has pushed to find new variable that could better explain the correct interpretation of the farm behaviour.

The study have considered some economic variables. In particular, incomes of the family-farms have been chosen.

To such purpose budgets of the single family-farms have been elaborated considering the incomes coming from the farm activity and those coming from off-farm labour activity.

The farm incomes are strictly related to the cropping system, which depends on the nature and on the quality of the available resources and on the level of market integration.

The family incomes coming from off-farm activity have been elaborated, on the base of gathered information and by the level of *sector* retribution. They tightly depend on the age, on the education level, on the labour market characteristics.

It has been also considered the distance and the time occurring from the farm to the work place for the notable reflexes that this may have on the farm activity.

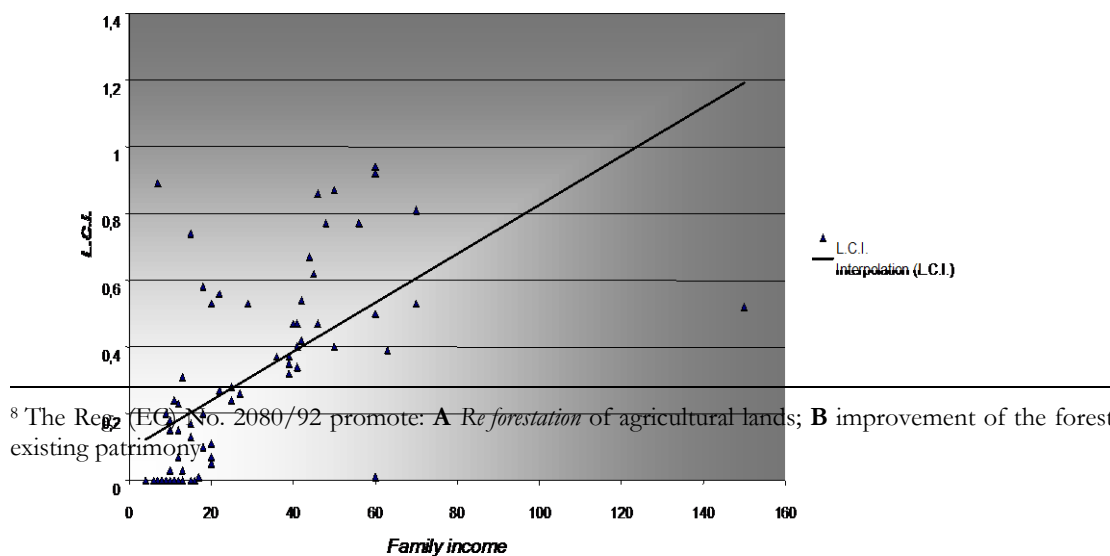
It's, in fact, evident that a meaningful distance conditions notably the residual availability time to destine in farm labour and pushing toward cropping system more extensive.

The family incomes have been then assessed jointly to the LCI, for each family-farm.

The figure 2 and 3 shown a graphic representation for the two family-farms groups.

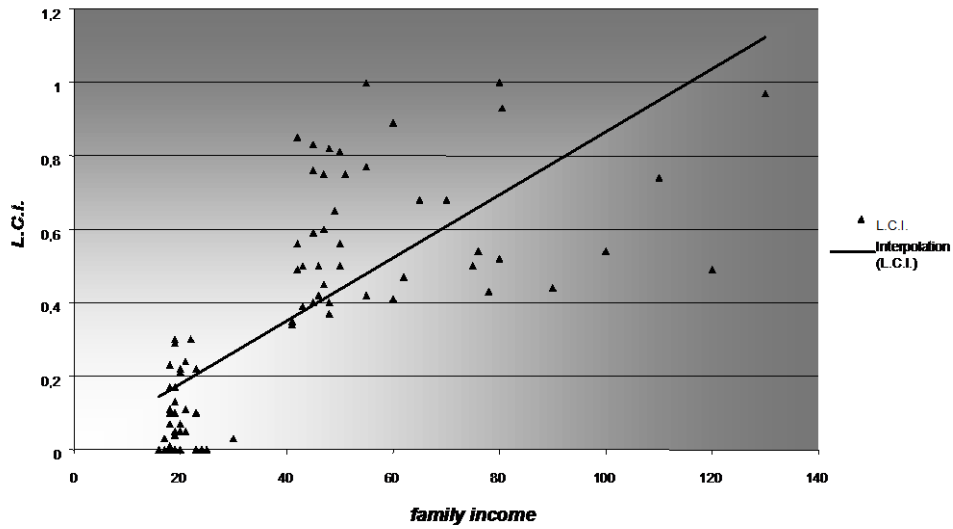
It is evident that for both the typology exists a direct correlation of these two indicators:

Fig. 2 - LCI and family income in peasant family-farms



as the family income increase so do the portion of the farm land destined to cultivations that better fit the desirable landscape. In other words the richer family-farms are more sensitive to the environmental problem and more active in the preservation of the rural landscape.

Fig. 3 - LCI and family income in pluri-active family-farms

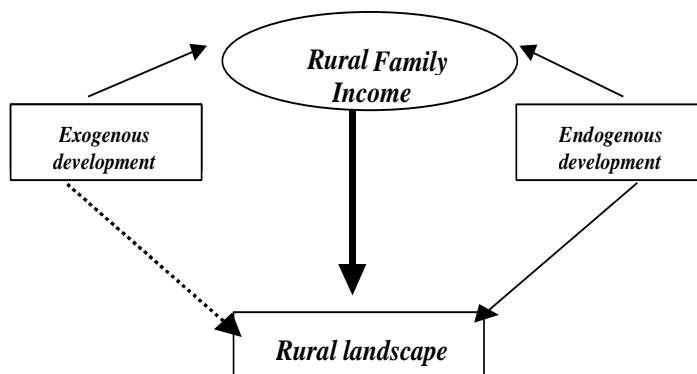


8. Conclusions

The analysis shows, quite clearly, that the key variable that defines the landscape in the rural areas of the southern Italy is the family income. Nevertheless the origin of this income seems not neutral as regards the potentially effects. In fact if the increase of the incomes of the rural areas derive from the exogenous economic and human resources the effect on the landscape is not always predictable because the potential conflicts arising from the use of the resources. If, instead, the regeneration of the economic context is founded on the exploitation of the endogenous resources, a virtuous mechanism starts, unique able to guarantee the safeguard of the landscape and of the economic and social context.

To consider the family-income as explanatory variable, it allows both to take in account the farm profitability and the demographic characteristics of the family. It is evident, therefore, that the farms that manifest better attitude towards rural landscape are those either equipped with greater natural resources and those in which the family has the possibility to integrate its farm income. The family-farm better integrated in the context and with greater economic availability can appraise the landscape as an economic resource and that can be offered to the collectivity. They are mostly involved in the process of revaluation the territory to produce services like agro-tourism, rural tourism and, therefore, to create occasions of additional income to the agricultural activities, starting a virtuous circle (see Fig. 4). This in turn means also that it became crucial to improve the conditions of life in the rural areas and create labour opportunities in the same rural areas (policies for the rural development). By the contrary, the family-farms less integrated in the local context, with poorer economic resources are unable to guarantee a sufficient income to all the family components. In this situation they induce to escape the most qualified

Fig.4 Rural Family Income and Rural Landscape



members of the family toward other sectors and toward other geographic areas, where greater are the possibilities to find a job. That set an ulterior tied up problem to the destination of these lands whose actual use jeopardises their return to a natural condition.

Another important aspect the study has showed is related to the methodology to be used when the described conditions are found. It become evident the necessity to integrate in a single framework all the relevant variables. To this the agricultural household models seem to better interpret the family-farms behaviour in this kind of context. These models,

in fact, consider farm characteristics (size, technological level and other characteristics) and the social-economic features of the family (number of components, age, education level, etc.) as important variables to influence the choice of cropping systems. For instance, under the same price system, with the same farm structure, families may choose different cropping systems according to opportunities for their members to work on the farm or outside, in relation to the local labour market and social characteristics of the family.

References

- Benjamin C.- Guyomard H., (1994), 'L'offre de travail extérieur des femmes: impact de la réforme de la PAC', *Economie Rurale*, n° 220-221.
- Brunori G., (1994), 'Spazio rurale e processi globali', in A. Panattoni (a cura di), *La sfida della moderna ruralità*, CNR-RAISA, Pisa.
- CEE (1988), 'Il futuro del mondo rurale', Comunicazione della Commissione, COM/88/501.
- Corner, Paul R. (1993), 'Contadini e industrializzazione', Editori Laterza, Bari
- Corsi, A. (1990), 'I modelli famiglia azienda: una rassegna della letteratura', *La Questione Agraria*, n. 39.
- Ellis F. (1992), 'Peasant Economics: Farm households and agrarian development', Cambridge University Press, Cambridge.
- Esposti R., Sotte F. (1998), 'Aree rurali, società rurali e mercati del lavoro', Ass. A. Bartola, Collana Appunti, n.4.
- European Commission (1997), 'Situation and Outlook: Rural Developments', CAP 2000, Working document of the Directorate-General for Agriculture (DG VI).
- Fedeli P.- Cipriani G. (1991), 'I romani allo specchio', *Il Tripode*, n. 2.
- Fonte M, (1999), 'Modelli di ruralità nelle regioni del Mediterraneo', Dattiloscritto.
- Franceschetti G. (1995), 'Problemi e politiche dello sviluppo rurale: gli aspetti economici', in G. Cannata (a cura di), *Lo sviluppo del mondo rurale: problemi e politiche, istituzioni e strumenti*, Il Mulino, Bologna.
- Franco S., Senni S., (1997), 'Applicazione della logica fuzzy nella misura dei fenomeni territoriali', *Agribusiness, Management & Ambiente*, n.4.
- Iacononi L., (1998), 'La sfida della moderna ruralità: sviluppo rurale, ambiente e territorio', in *L'agricoltura italiana tra prospettiva mediterranea e continentale*, Atti del XXXIII Convegno di Studi SIDEA.
- ISTAT (1986), 'Classificazione dei comuni secondo le caratteristiche urbane e rurali', Note e relazioni, n.2.
- Kosmas C.- Ferrara A.- Quaranta G.- Gerontidis St., (1999), 'Key Indicators in Defining and Mapping Environmentally Sensitive Areas to Desertification', in corso di pubblicazione presso *Catena Supplement*, Elsevier, Amsterdam.
- Merlo V. (1997), 'Sociologia del verde. Lo spazio rurale in Italia' Franco Angeli, Milano
- OCDE (1994), 'Créer des indicateurs ruraux pour étayer la politique territoriale', Paris.
- Pahl R.E. (1966), 'The rural-urban continuum', *Sociologia Ruralis*, VI.
- Pilati L. (1996), 'I sistemi agricoli nelle interdipendenze territoriali', CNR-RAISA.
- Quaranta G. - Salvia R. (1999), 'Peasant agriculture and part-time farming: use of resources and landscape effects in a rural area of Southern Italy', *MEDIT*, n. 4.
- Quaranta G.- Bove E. (1996), 'Desertification in southern Italy: The case of Clay-hill areas in Basilicata Region', *ICALPE*.
- Quaranta G.- Marotta G.(1998), 'Rural development and local labour market: An agricultural Household derived model for allocation of family farm labour in southern Italy', *MEDIT*, n.3.
- Quaranta G., (1997), 'Interazioni tra strumenti di politica Agricola e Politica Economica: un'ipotesi interpretativa del loro impatto su famiglie-aziende dell'Alta Val d'Agri', in (A. Cioffi – A. Sorrentino, a cura di), *Le piccole aziende e la nuova politica agricola dell'Unione Europea: problemi economici e strutturali*, Franco Angeli.
- Quaranta G., (1999), 'Family Farm Economic Behaviour and Soil Degradation in a Mediterranean Context', *MEDIT*, n. 2, 1999.

Saraceno E. (1994), 'Alternative readings of spatial differentiation: The rural versus the local economy approach in Italy', *European Review of Agricultural Economics*, vol. 21-3/4.

Saraceno E. (1996), 'Il concetto di ruralità: problemi di definizione su scala europea', *Dattiloscritto, Seminari INEA su Sviluppo nelle aree rurali*, Roma.

Vitali O. (1983), 'L'evoluzione rurale-urbana in Italia', *FrancoAngeli*, Milano.

Zadeh L. A. (1965), 'Fuzzy sets', *Informational Control*, 8, 338-353.