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# **Evaluating the Improvement of Quality of Life in Rural Areas**

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# **Evaluating the Improvement of Quality**

## of Life in Rural Areas

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#### Abstract

The research starts from the necessity to create specific tools for evaluating the impacts of rural development policies on fragile areas. The study is motivated by the need for developing an appropriate evaluation method that leads to gather meaningful information for a broader understanding of the quality of life in rural areas, including the subjective well-being's dimensions and its determinants and feeds the policy designs on this specific domain.

The multidimensional nature of quality of life is a main challenge in terms of evaluation. Indeed, within the Rural Development Programmes 2007-2013, the enhancement of the quality of life in rural areas is one of the major strategic objectives to be addressed by a menu of measures.

Selections of some current literature on the multidimensional nature of quality of life have been used as conceptual basis for analysing the extent to which the European evaluation framework for rural development programmes (EC 1999, 2006, 2010) - based on the intervention logic model, the use of economic indicators and evaluative questions - is able to capture the relevant dimensions of well-being rural people's lives. A part of the research is based on the analysis of ex-post evaluations carried out in Italy. The evaluations are expected to assess the improvement of quality of life in rural areas as effect of programmes' implementation.

The paper provides two different experiences of quantification of quality of life in rural area: a synthetic measure of marginality as a proxy of quality of life indicators (in Piedmont) and a synthetic index of quality of life (in Emilia Romagna).

The paper proposes a wider integrated evaluation approach to be used in the context of the evaluation of impacts of rural development programmes, that through the combined utilization of quantitative and qualitative indicators and additional evaluative questions, allows a more comprehensive assessment of quality of life in rural areas.

Keywords: evaluation, quality of life, marginality, qualitative indicators

JEL classification: 0180.

#### 1. INTRODUCTION

The multidimensional nature of quality of life (Layard 2005, Nussbaum, Sen 1993, Alkire, 2002, Prescott-Allen 2001, Ura *et al* 2004, Stiglitz, *et al* 2009) is a main challenge in terms of evaluation.

In the framework of the European Common Agricultural Policy, the enhancement of the quality of life in rural areas is one of the major strategic objectives to be addressed by a menu of measures within the Rural Development Programmes 2007-2013. The evaluations are expected to assess the improvement of quality of life in rural areas as effect of programmes' implementation.

The study is motivated by the need for developing an appropriate evaluation method that leads to gather meaningful information for a broader understanding of the quality of life in rural areas, including the subjective well-being's dimensions and its determinants and feeds the policy designs on this specific domain.

Selections of some current literature on the multidimensional nature of quality of life have been used as conceptual basis for analysing the extent to which the European evaluation framework for rural development programmes (EC 1999, 2006, 2010) - based on the intervention logic model, the use of economic indicators and evaluative questions - is able to capture the relevant dimensions of well-being rural people's lives. A part of the research is based on the analysis of ex-post evaluations carried out in Italy.

In the first part of the paper, general information about Rural Development evaluation for the period 2007- 2013 and some key concepts are provided.

In the second part, a specific tool set by IRES Piemonte (Institute of Socio Economic Research) to quantify marginality, as a proxy of quality of life, is considered. The methodology is based on standardized data used to compose homogeneous aggregate starting by empirically observed variables, and it offers some advantages estimating aggregate indicators. The information used to build the indicators come mostly from secondary sources, while territorial data details refer to municipal level (LAU 2).

Finally, the third part of the work provides the experience carried out in the evaluation process of Emilia Romagna region, based on the construction of a synthetic index of quality of life gathering together different domains.

# 2. THE RURAL DEVELOPMENT PROGRAMMING AND COMMON MONITORING AD EVALUATION FRAMEWORK

The essential rules governing rural development policy for the period 2007 to 2013 are set out mainly in two regulations: the Regulation (EC) N. 1290/2005 and the Regulation (EC) N. 1698/2005.

The first one sets specific requirements and rules on the financing of the CAP by means of the creation of two funds: the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Fund for Rural Development (EAFRD).

The second Regulation focuses directly on the support for rural development provided by the EAFRD. It introduces two major changes in RD *acquis* as compared to the 2000-06 period: firstly, the simplification of delivery structures, and secondly, the strategic approach. Focusing on the latter, the strategic guidelines setting out the EU priorities are integrated in National Strategy Plans (NSP), that also ensure the complementarity with the cohesion policy. Each Member State is called to set out its own Rural Development Programme (RDP). It is made up of four "thematic axes" that

correspond to the core objectives for rural development: (i) improving the competitiveness of the agricultural and forestry sector; (ii) improving the environment and the countryside; (iii) improving the quality of life in rural areas and encouraging diversification of the rural economy; (iv) implementing the LEADER<sup>1</sup> approach. Rural Development Programmes allow to translate the strategy into action through the implementation of these measures, which are foreseen in the four thematic axes (EC, 2006). To secure a balanced approach to policy, in every RPD the total amount of the rural development funding must be spread between all the thematic axes, within a regulatory minimum funding limit for each one; moreover the resources allocation among axes and measures should have taken into account the need highlighted by the SWOT analysis (Monteleone, 2005).

The Commission has drawn up, in agreement with the Member States, a series of common indicators for monitoring RD programming for the period 2007-2013 (EC, 2006). Evaluation has also been strengthened in the ongoing period, with the requirement for an ex-ante, a mid-term and an ex-post evaluation of each programme. These evaluation studies are designed to provide a basis for sound programming, improving and adjusting programmes at every stage, helping to plan an appropriate follow-up and to inform the public or the budgetary authorities about the effects and the value of the programme (Bolli *et al.*, 2008).

A key-tool of evaluation is the reconstruction of the so-called "intervention logic", which establishes the causal chain from the financial input, via the output and the results of measures, until their impact. Thus, the intervention logic guides the consecutive assessment of a measure's contribution to achieving its objectives. The intervention logic starts from the (perceived) needs of rural areas, which describe the socio-economic or environmental requirements to which the programme and the measures should respond. The policy response is developed through a "hierarchy of objectives", representing the break down from the overall objective, via more specific objectives, to operational objectives, in harmony with general development aims expressed at EU and Member States' level. To synthesize, the strategy of RDPs, composed by activities and measures meeting the needs of rural areas, is built on the "hierarchy of objectives". This "hierarchy of objectives" is in turn matched by a "hierarchy of indicators" which reflect the different elements of the intervention logic of a measure.

The reference document is represented by the Common Monitoring and Evaluation Framework (CMEF), adopted in September 2006. The CMEF contains the guidelines to monitor and evaluate RDPs, providing a set of specific evaluation questions related to each measure and establishing five types of indicators in line with the general approach to programming. These indicators correspond to the hierarchy of objectives which is defined implicitly in the Regulation (EC) 1698/2005 and they are: (i) financial indicators, to measure expenditures; (ii) baseline

<sup>1</sup> Acronym of "Liaison Entre Actions de Développement de l'Économie Rurale", meaning 'Links between the rural economy and development actions'. The LEADER approach involves projects designed and executed by local partnerships to address specific local problems and constitutes a methodological and transversal fourth thematic axis, because it can integrate other measures from the axis 1, 2 and, in particular, 3.

indicators, to define the ex ante situation; (iii) output indicators, to measure the realisations; (iv) result indicators, to measure immediate effects of interventions; (v) impact indicators, to measure direct and indirect general effects.

However, the CMEF makes only brief reference to the specificities of assessing the impacts of the LEADER methodological approach and of measures to improve the quality of life within RDPs (axis 3 measures, included those activated by the LEADER approach of axis 4). In relation to quality of life, each axis 3 measure fiche contains a specific evaluation question regarding the extent of the contribution of the measure, support, supported investments, activities or services provided to improving the quality of life in rural areas. However no definition of quality of life is proposed, as well as no evaluation methodology.

#### 3. QUALITY OF LIFE AND MARGINALITY: A SYNTHETIC THEORETICAL BACKGROUND

Currently, there is a great deal of interest in exploring policies and practices that enhance wellbeing rather than economic growth. The Gross Domestic Product as indicator of wellbeing has been criticised by many. Some authors (Stiglitz, *et al 2009*; Frey and Stutzer, 2002) argue that conventional, market-based measures of income, wealth and consumption are insufficient to assess human wellbeing. They need to be complemented by nonmonetary indicators of quality of life.

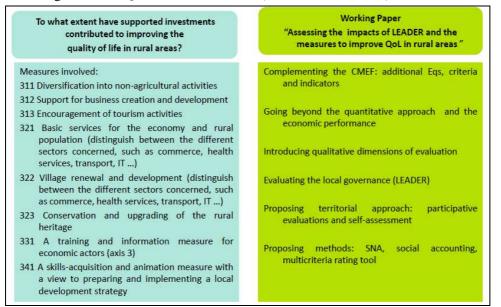
Quality of life (QoL) is similar to wellbeing concept and is a function of people's life circumstances, which of course have an economic dimension, but also includes their social networks, their health and their sense of worth and the sustainably of the environment on which they depend. It is clear that the targeted actions of RDP's Axes 3 and 4 do provide means to contribute to a rather broader notion of QoL. There are different ways of exploring quality of life, but anyway there is no simple and easy way to measure it; it clearly needs a range of indicators.

Some authors view the QoL in terms of wellbeing (Giovannini and Hall, 2007; OECD, 2006, Boarrini *et al*, 2006), others argue that it is represented by a 'capability to flourish' based on people's ability to pursue the goals they value. A third point of view is based on allocating the non-market goods and services fairly across different groups. Yet, some authors (Stiglitz *et al.*, 2009, Jackson 2005) underline that QoL can only be maintained if the resource set is sustainably used; so there must be an environmental component. Despite of the relation between quality of life and wellbeing, also the latter is interpreted in various ways: it is generally viewed as a description of the state of people's life situation (McGillivray and Clarke, 2006), but the theme is still evolving.

The cited recent studies have at least permitted to identify three principal and integrated dimensions of quality of life: a socio-cultural, an environmental and an economic one. However, the concept remains ambiguous and difficult to translate in operational terms, lacking an universally and acceptable definition and often facing with competing interpretations.

Currently, it is possible to underline a strong overlap between the three dimensions of quality of life with the various concepts of wellbeing and especially in the case we look at studies where people directly participate to the survey (Council of Europe, 2008). For this reason, a specific document has been established in 2010 by the Europen Evaluation Network for Rural Development (EENRD, 2010), since the CMEF doesn't provide any reference to the methodological approach.

Figure 1. The QoL: CMEF e EENRD (Cristiano et al., 2010)



Applying this division to rural areas, the dimensions could be composed as follows:

- the socio-cultural and services dimension includes both "soft" factors such as community life, traditions, social infrastructure, cohesion and "hard" factors, as buildings or other infrastructures.

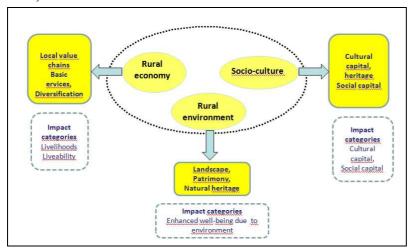
- the environmental dimension encompasses the human wellbeing arising due to the conservation and upgrading of environment and rural heritage. In this sense, the concept of environment includes not only biophysical factors and their interactions, but also the built environment and the interactions between different systems.

- the economic dimension implies an adequacy and security of income, in the absence of major disparity with incomes of others in society (Wilkinson and Pickett, 2009).

It is also important to remind that the concept of quality of life includes the two milestones of 'liveability' (services, environmental quality and social networks that make rural areas places in which people want to live) and 'livelihoods' (how people get their source of revenue and diversify their land-based and other activities to sustain those livelihoods, also in capitals point of view) (Van der Ploeg, Long, 1994; EENRD, 2010).

It is clear that also in the RD context, QoL consists of several aspects, i.e. economic welfare through diversification activities, provision of basic living conditions, a social network of relationships and associations as well as the cultural environment that makes life enjoyable and satisfying. The composition and content of RD measures in the programmes dictates which logical framework (objective levels vis-à-vis outputs, results, impacts) forms the basis for identifying quality of life indicators in axes 3 and 4. During the structuring phase of the evaluation process, clarifications on the existence and completeness of such a logical framework need to be obtained.

Figure 2. Aspects, linkages and impact categories of Quality of Life in Rural Areas (EENRD, 2010)



#### 4. MEASURING QUALITY OF LIFE: TWO REGIONAL EXPERIENCES

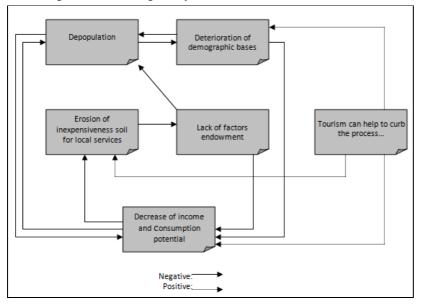
#### 4.1. Marginality index by IRES Piemonte

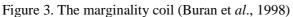
The marginality is a concept typically addressed by regional studies and, in particular, by those investigating the development gap. However, in the detection of situations of socio-economic marginalization, there is no single model. There are several studies that have addressed this issue, but the methods used, especially the selection of variables, depend on the design of development assumptions underlying the analysis

The socio- economic marginality (Buran *et al.*, 1998) can be defined as a structural weakening of the reaction capability in a local system. The debate on socio-economic marginality is focused on the understanding that the resources available to develop local systems do not operate everywhere with the same intensity (Crescimanno *et al.*, 2009). The prerequisites of development (i.e. facilities, activities, resources, knowledge and so on) are not present in all areas in the same proportion; they are geographically distributed in an irregular manner. Where one or more features

of development are significantly lacking, it is easy to verify the risk of social and economic marginalization. Moreover, the lack of economic opportunities, social isolation and difficulties in delivering services easily generate a self-reinforcing process definable as "downward spiral", difficult to reverse without a sufficient population endowment or in the absence of specific factors and resources.

The concept of marginality can then be considered very close to the concepts of wellbeing and quality of life, or better can be deemed as a proxy of their lack. Since the CMEF, as reminded above, doesn't provide specific measures to evaluate quality of life in rural areas, and since the working documents provided by the EENRD offer only some indications, the concept of marginality seemed to be an appropriate and useful proxy by which it is possible to make assumptions on the issue concerned. Furthermore, a method to provide its measurement is already established.





The classification of the degree of marginality was made by IRES Piemonte in collaboration with a table of Regional technical experts, which saw the participation of representatives of territorial autonomy and the Technical Secretariat of the Conference Region - Local Autonomous Body.

The methodology provides to estimate a synthetic index, calculated from a selection of different socio-economic variables, for all the municipalities of Piedmont until 5000 inhabitants (between different contexts in the mountains, plains and hills). In accordance with what stated in Articles 1 (purpose) and 2 (general lines of action) of Regional Law 15, June 29, 2007, and under

the classification results of previous experiences, it was decided to use a cluster of indicators organized as follows: three for the population size, three for income or economic well-being, three for the provision of services, and two for the manufacturing base.

The first step is the analysis of variables redundancy, because there must not be statistically significant interdependency among the variables (Büchi, 2001; Cagliero and Trione, 2009). In fact, it may occurred that the indices covered are not independent from the conceptual point of view or can be substituted in the case of strongly correlation; this could cause distortions in the result and errors in the assessment. In particular, highly correlated variables would attribute a disproportionate weight to certain phenomena with respect to others. To avoid this problem, the data set has been checked by a Bravais-Pearson approach, that measure the correlation between variables. (Crescimmano *et al.*, 2010).

Once identified the non-redundant set of variables, these are collected in a single data set. The values thus obtained are still adjusted, because some variables express positive scenarios, while others express decline. In fact, the sign meaning must be uniform: increasing values correspond always a condition of incremental territorial advantage, and vice versa. The values are then checked in the distribution to assess the presence of outliers and weighted or expressed as a percentage (relative to population size or municipal) to avoid any distortions related to the diversity and size of the municipalities analyzed and to ensure the comparison. Then, the variables are simply standardized<sup>2</sup>.

In the analysis developed by IRES Piemonte, the classification of marginality is then given as result of four main dimensions (Table 1).

**Demography**: the quantitative and qualitative characteristics of the resident population and the evolutionary trends are elements that significantly affect the possibilities of territorial development.

**Income**: the level of population welfare, in terms of income, wealth and consumption is a primary factor in triggering the cycle of development;

**Endowments**: in a territorial system, the presence of endowments, such as infrastructure for connectivity or accommodation or services for families, affects the attractiveness of flows (finance, assets and people) from outside;

Activities: economic activities, e.g. manufacturing or service, are the basis for the development of any economic system: the wealth produced through them is used to maintain high not only the consumption levels of residents but also the investments.

 $z_i = \frac{x_i - \mu(x)}{\sigma}$ 

whereby zi is the standardized value, xi represents the i-esim value,  $\mu(x)$  is the average value and  $\sigma$  is the standard deviation.

Table 1. Marginality index: representative variables for each marginality dimension (version 2009)

Item	Indicator	Description	Data Producer <sup>2</sup>	Year
Demography	Population	Number of inhabitants of the municipality	ISTAT	2008
	Population growth	Pop. (N) – Pop.(N-10) / Pop.(N-10))	ISTAT	2008/1998
	Population $> 64$ years old	Pop. $> 64$ / Total Pop.	BDDE	2008
Income	Taxable income	Taxable income / Pop.	MEF	2006
	Local Property Tax (ICI)	ICI_std / (homes + local units)	OFL	2007
	Waste	Waste (t) / Total Pop.	Piedmont Region	2007
Endowments	Services to families	N. services to families <sup>1</sup>	BDDM	2007
	Tourist attendance	N. of tourists / Population	Piedmont Region	2008
	Connectivity	Distance from nearest autoroute; railway station	Piedmont Region	2008
Activities	Manifacture	Manifacture empl./ Pop.	ISTAT	2006
	Weight of commerce	Number of shops (differnt sizes)	Piedmont Region	2008

Source: Crescimanno et al., 2010

<sup>1</sup> Postal offices; Pharmacies; Rest houses; Sanitary services; Secondary schools; Bank counters

<sup>2</sup> BDDE: Regional Demographic Databank; BDDM: Regional Mountain Databank; CSI: Consortium for the Information System; ISTAT: National Institute of Statistics; MEF: Ministry of Economy and Finance; OFL: Regional Local Finance Observatory; ORC: Regional Commerce Observatory.

For the current programming phase (2007-2013), the evaluation objective is to assess the effects of Piedmont RDP on rural areas. The approach, therefore, is a before-after comparison, similar to difference in difference analysis, of developments of the indices of marginality estimated for rural areas. The possibility to estimate this index at the municipal level allows, in fact, to create two different groups: a target group, where the interventions are focused, and a control group, where interventions are absent or poorly implemented.

At the present stage it is not possible to set up a definitive evaluation framework, because the low level of programme implementation, especially for measures of Axes 3 and 4, where most of the interventions are not yet implemented. However, it is decided to test the capacity of the model to estimate the changes in the marginality index in different areas, through a comparison of the baseline situation and the last year available by IRES Piemonte studies. This empirical check process shows that the index is sufficiently adequate to detect changes in estimated marginality, both in the overall index and its components. Consequently, while for the RDP mid-term evaluation the model could be used only for descriptive purposes, for the future on going evaluation activities, especially for the ex post evaluation in 2015, model will be fully used, for assess the effects of the specific interventions in rural areas (Cagliero *et al.*, 2010)

In the Mid Term Evaluation Report of the 2007-13 Piedmont, the Marginality index has been used for the analysis of measure 311, in particular to provide an initial answer to the CMEF Common Evaluation Question: *To what extent have supported investments contributed to improving the quality of life in rural areas?* 

The available data and the status of the measure 311 (109 projects admitted) must not allow to answer the question definitively; then the analysis is substantially only descriptive.

The Marginality index, which is used as a proxy for QoL in rural areas, has been calculated for the Piedmont Municipalities for the years 2006 and 2009: a higher negative index value is a mirror image of the lower level of quality of life. The analysis included as a target group (Municipalities 311) the municipalities where are located the farms admitted to the measure 311, as a control group the provincial average index of marginality.

The first aspect is that the data show the indices of profitability target of Commons are generally lower than both the provincial average, both the regional average. It appears consistent with the goal of intervention within the most marginal areas.

In addition, during the period 2006-2009, ie between the last year of the old programming, used as a baseline, and the most recent year, no significant changes are shown in the case of the provincial averages, while for the "Municipalities 311" it is possible to appreciate a relative increase in the Marginality index in at least in four areas: Torino, Novara, Biella e Verbania.

	2006		2009		2009/2006	
	Provincial Average	Municipality 311	Provincial Average	Municipality 311	Provincial Average	Municipality 311
Torino	0,214	-0,050	0,209	-0,100	=	-
Novara	0,356	0,020	0,354	0,006	=	-
Cuneo	-0,160	-0,048	-0,149	-0,037	=	+
Asti	-0,243	-0,264	-0,234	-0,246	=	=
Alessandria	-0,102	-0,373	-0,104	-0,396	=	=
Biella	0,009	-0,055	-0,004	-0,079	-	-
Verbania C.O:	-0,164	-0,067	-0,174	-0,084	=	-

Table 2. Marginality index values for Provincial average and "Municipalities 311" in Piedmont (2006-2009)

Source: NUVAL Piemonte, 2010

#### 4.2. Quality of life in the evaluation process of Emilia Romagna RDP

As well as the abovementioned experience in Piedmont, the methodology proposed in Emilia Romagna (the Mid Term Evaluation Report of the 2007-13) provides the estimation of a synthetic index, calculated from a system of initial indicators. However, in the latter case the efforts is oriented towards the identification of variables related to different domains of quality of life, rather than marginality.

The general context of "quality of life in rural areas" is broken into 6 dimensions and – based on these – 25 indicators. Drawing the indicators menu, not only were taken into account domains directly affected by RDP, but a broader list of dimensions, not strictly related to the programme, were considered too, provided that they could be crucial for the perception of quality of life by local population (i.e.: local safety). Then the process aims to assess the quality of life in rural areas by means of an holistic approach. In this process it was made extensively use of the <u>participatory</u> approach, exploiting the perceptions expressed by stakeholders (at local level) about the set of *ad hoc* indicators, and <u>mediating</u> qualitative values with quantitative data available in statistical sources and other datasets.

Stakeholders play then a fundamental role: it is by their contribution that it is highlighted the (local) perception of quality of life in two periods  $(T_0 - T_n)$  in a defined area. While, the latter (the territory) should be identified among rural areas (areas B, C and D of Italian NSP), preferably selected from Leader areas.

In the analysis developed, the classification of quality of life is then given as result of 6 main domains:

**Services**: presence of facilities placed in the territory and related to local health centre, kindergarten, assistance to disadvantaged groups, waste, safety, shops;

**Economy**: relate to the dynamism and solidity of local entrepreneurship, viability and sustainability of agriculture, touristic infrastructure, relevance of local administrations initiatives, local employment by gender and age, infrastructures;

**Environment**: presence of green areas (parks, rural areas, lakes, etc.), healthiness of the territory;

Culture: presence of artistic heritage, cultural activities;

Quality of social and institutional process: presence of association and voluntary initiatives, governance.

Moving from the abovementioned indicators, the methodology aim to work out a synthetic index of quality of life, assigning to each variable:

- a "weight", mirroring the relative importance of each indicator compared with the others (how indicator concurs mostly in quality of life)
- an "assessment value", which highlights the value attached to each indicator in a specific area and time.

The weights "translate" the regional strategic priorities. They are fix ex ante and cannot be modified at local level. The assessment values are defined at local level involving stakeholders which assess the performance of each indicator in the local context by assigning a value along a cardinal scale. These values are given in two different moment: ex ante and during the RDP implementation.

Indicators associated with their own weights (regional priorities) and assessment values (local perceptions) – eventually pondered by statistical data if available and whenever they do not comply with the local assessment – contribute to build the synthetic index of quality of life expressed by a group of stakeholder in specific sub-regional territory in a period of time<sup>3</sup>.

Finally, in the ex post evaluation it will be analysed the relation among the quality of life, as defined by the abovementioned methodology, and the activities realized by the RDP investigating if

 $<sup>3 \</sup>sum I \ p * P$ 

the dynamic highlighted by means of indicators and index has been affected by the rural policy. To this end, specific techniques will be implemented in order to study the correlation among the two factors (QoL and RDP).

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