

IS THE PARTNERSHIP GOVERNANCE ABLE TO PROMOTE ENDOGENOUS RURAL DEVELOPMENT? A PRELIMINARY ASSESSMENT UNDER THE ADAPTIVE CO-MANAGEMENT APPROACH

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Abstract: Ever increasingly more, all the actors directly or indirectly involved in the planning processes express the need to know the effects deriving from the implementation of rural development policy. In this direction, evaluation can make an important contribution, fostering the development of a 'good policy' as underlined by EU regulations. Among the specific evaluation questions developed by the Common Monitoring and Evaluation Framework, one of them relates to the improvement of governance. Considering the Adaptive Co-Management (ACM) approach's capacity as a proxy of the quality of network governance, the study aims to propose the ACM theoretical framework as a suitable model with which to study the social interactions between actors in the smallest unit of the LEADER process (i.e., the local action group's (LAG's) partnership governance). The proposed methodology is subsequently tested on a specific case study through the evaluation of the partnership governance of two case studies in the South of Italy. The empirical evidence supports the idea that ACM approach may represent a new model to assess the quality of the implementation process of the LEADER Programme. In addition, the ACM approach can lead to a new organizational and self-evaluation model of LAGs which places an emphasis on the importance of the relational process among its members.

Keywords: Community-Led Local Development, LEADER, governance, Social Network Analysis, Local Action Groups

1. Introduction

The LEADER⁴, which was one of the best-known European rural development programmes, was conceived as an integrated and endogenous approach to rural development. This approach has been widely recognised as successful due to its innovative character, and the results it has obtained in many rural areas despite relatively limited budgets. A possible explanation could come from the idea that LEADER has represented – and continues to represent in the Community Led Local Development (CLLD) '...a response to the crisis of the state and the market' (Osti, 2006: 541), as well as the importance given to local decision-making, which resulted in greater coordination and an easier solution to potential conflicts in local development planning within rural areas (Shucksmith, 2000). Local participation, therefore, becomes both a means and an end of rural development, and the LEADER method, as well as the current CLLD approach, represent the most emblematic case of endogenous rural development (Zago et al., 2015).

Some scholars (Kováč, 2000; Ray, 2001; Scott, 2004) have highlighted LEADER's role in positively affecting the outcomes of development programmes by promoting bottom-up territorial experiments, encouraging local actors to create connections with each other, and regulating the composition of actor networks. In the LEADER before, and in the CLLD now, a very central role is played by the partnership (Chevalier et al., 2017). Therefore, this approach is expected to achieve improved governance in rural areas (Falkowski, 2013), as partnership governance is increasingly accepted as an institutional means of promoting endogenous rural development (Furmankiewicz et al., 2010).

In the LEADER programme⁵, one of the evaluation questions developed by the Common Monitoring and Evaluation Framework (CMEF) guidelines⁶ pertains to the assessment of the improvements of governance in rural areas as a result of this programme (European

⁴ Liaison Entre Actions de Développement de l'Economie Rurale.

⁵ It is a typical example of the combined application of the area-based, bottom-up, partnership, innovative, multi-sectoral approach of inter-territorial co-operation, and decentralized management and financing.

⁶ This document represents the framework for all Member States to carry out monitoring and evaluation as it makes explicit and systematic and uniform procedures and implementation modalities. It defines the common indicators, their units, the managers and the methods of data collection, the sources of information, the recording frequency (European Commission, 2006).

Commission, 2011; 2016). However, there are no specific results or impact indicator requirements for the evaluation of LEADER, or the monitoring and evaluating of LEADER governance because LEADER is considered to be a tool to achieve the objectives of other axes of rural development programmes.

The intention behind the evaluation of projects or policies is to identify the factors of success or failure, to assess the sustainability of results and long-term impact, and to draw conclusions that might inform other interventions. According to the European Commission, rural development evaluation must provide information on the effectiveness, efficiency, and relevance of co-financed programmes (Metis GmbH, 2010; European Commission, 2013).

Defining what could be considered 'a good partnership governance' is difficult. This topic is discussed in several policy documents⁷ (European Evaluation Network for Rural Development, 2010).

According to the World Bank (2009: 10), 'Governance is said to be 'good' when it allocates and manages resources efficiently, effectively, and equitably'. Therefore, in this framework, instruments to assess governance, which might contribute to supporting policy decisions, are becoming a priority for the policy agenda.

In recent years, there has been significant growth in the types of methods and tools that improve the understanding of governance deficits and weaknesses. Among these, UNDP (2009) provides an overview of 22 globally applied tools that focus only on the field of local governance. However, they are based on complex sets of indicators and have been structured for developing and poor areas, rather than the EU's rural areas. To the best of our knowledge, in studies on governance, the concept and the analysis of the mechanisms through which local actors generate resources within the networks they act have not been evaluated in an empirical way.

In an attempt to overcome some of the limits affecting previous research (i.e., the absence of indicators, tautology), the general aim of this paper is to contribute to the evaluation process of the LEADER approach by proposing a new theoretical framework with which to assess the quality of partnership governance in rural areas to CLLD.

The reflections of Mantino (2008: 7), namely that 'the network coordination system permeates the governance of rural areas', and of Bock (2012: 54) that the LEADER '... aims to promote the creation of networks ... internal and external...', have suggested that a good starting point would be the study of the partnership governance under LEADER method.

The applied methodological approach was inspired by the works of Duff et al. (2008) and Muñoz-Erickson et al. (2007), who argued that governance of complex systems, such as rural areas, should be adaptive and collaborative. In this view, the ACM approach offers an interesting theoretical framework.

Assuming that the LEADER/CLLD plays a crucial role in delivering most development policy for rural areas, the study was guided by the following research question: 'are the structural properties of the LEADER partnership network suitable to ensure a good partnership governance that can foster endogenous development in rural areas?'

Considering the ACM approach's capacity as a proxy of the quality of network governance, the study aims to propose the ACM theoretical framework as a suitable model with which to study the social interactions between actors in the smallest unit of the LEADER process (i.e., the local action group's (LAG's) partnership governance).

The paper is structured as follows. Section 2 focuses on the main issues related to the assessment of local governance in rural areas under the LEADER/CLLD. Section 3 explains the link between the adaptive co-management approach and SNA indicators for the assessment of the LEADER internal network governance. The ACM dimensions and the methodology are

⁷ In the White Paper on Governance, European Commission (2008) launched vast reform of governance on the basis of five principles: openness, participation, accountability, effectiveness and coherence.

explained in Section 4. Finally, Sections 5 and 6 present the case studies and the findings and Section 7 offers a conclusion.

2. Assessing the partnership governance under the LEADER/CLLD

Now, more than ever in the past, institutions, stakeholders and representatives of civil society that are directly or indirectly involved in the planning processes, need to know the effects of the implementation of endogenous rural development policies. This is required to demonstrate their socio-economic and environmental results and impacts; to improve the efficiency and effectiveness of the instruments currently being implemented; and to guarantee replication of successful examples and avoidance of failed ones.

In this context, as pointed out by either the community legislation or the CMEF guidelines, the evaluation of rural development programmes could represent an important contribution to the development of 'good policy'.

Actually, the LEADER method has already adopted an ongoing evaluation of the processes and effects. It provides a good starting point for improving the quality of the LEADER approach and for making changes to its planning.

This approach has significant organisational implications because evaluation should not be limited to analysing processes. Rather, it should identify and, wherever possible, quantify the effects of the LEADER method interventions⁸. As highlighted by High and Nemes (2007), the assessment must consider two fundamental questions, namely: 'Will the action succeed in achieving its objectives?', and 'how it could be improved by the implementation of an action in relation to its original aims?'

The evaluation system of rural development policies for the period 2007–13 was based on a framework prepared by the CMEF. The assessment model that inspired this document is based on the identification of socio-economic and environmental needs that the programme must meet; on the indication of a hierarchy of objectives for each action of the programme and the association of indicators to the three types of objectives. These indicators are designed to measure the level of achievement of specific objectives set by the individual measures and/or programmes, with the expectation of at least achieving all of the general objectives. Finally, Member States and partnerships are involved in the preparation of additional indicators in order to fully capture all effects of programming and to consider the specific needs and realities of the territory concerned (EC, 2006; Terluin and Roza, 2010).

In this context, governance in its various forms is an important topic in the evaluation of the impacts of LEADER measures. In the CMEF documents that pertain to the impacts of the LEADER approach, a question on the possible improvements of the governance in rural areas is clearly formulated⁹ and the applied method seems more designed for the evaluation of rural development programmes at the national or regional level than for the study and evaluation of local governance.

On the whole, as stated in the European Evaluation Helpdesk for Rural Development (European Commission, 2016), the evaluation of governance should be referred to as an understanding of the difference between multi-level and local governance and as a way to see governance as a process or a product of rural development policies.

With regard to the EU, multi-level and local governance are key institutional frameworks for the implementation of rural development policies (Shortall, 2008). Multi-level governance refers to the vertical dimension of 'the political administrative co-ordination of the development system, defining the institutional, regulatory and procedural environment as external circumstances for the operation of LEADER- or territory-based projects' (European Evaluation Network for Rural Development, 2010, 24).

⁸ About the intangible outputs of the LAGs, see Nardone et al., 2010; Lopolito et al., 2011.

⁹ The raised question is: "To what extent has the Leader approach contributed to improving governance in rural areas?" (European Evaluation Network for Rural Development, 2010: 47).

The horizontal dimension, which relates to the local territorial framework according to networks and endogenous action, is also called local governance. The major concern of the LEADER methodology is local governance (Goodwin, 1998). It can be defined as a network-like collaboration (partnership) between three types of local stakeholders (public administration, the private/economic sector and civil society) with multiple views and aims (Murdoch, 2000; High and Nemes, 2007; European Evaluation Network for Rural Development, 2010; Teilmann and Thuesen, 2014). In other words, it 'represent[s] a hybridity of representative and participatory systems' (Derkzen and Bock, 2009: 76).

All these features are also in Douglas (2018), that defines governance as "...a new, negotiated, multi-stakeholder process and a collaborative system of decision design and decision making, characterized by significant degrees of self-governing, with attendant resources commitments and shared power, where there is sufficient common cause and a pragmatic understanding that to achieve the requisite capacity and agency requires appropriate institutional and organizational arrangements beyond the established architecture of power, control and authority, notably that of government)".

The literature (Zago et al., 2015; Pollermann et al., 2014; Douglas, 2018) generally acknowledges several elements as being broadly typical of governance, including a shift from a traditional government approach to new participatory governance modes¹⁰ for making collective choices (i.e., such as those related to policy formulation and decision-making procedures for their implementation) through actions and projects. These changes in the mode of governing have, therefore, impacted the types of institutions involved in rural development policy (RDP). In keeping with this approach, governments and public administrations (PAs) are no longer the only decision-makers. The result has been new organisational structures, such as area-based, cross-sectoral partnerships (Marsden and Murdoch, 1998) characterised by a distribution of decisional power among different components or agencies, with new arrangements based on the combined roles of state agents and communities. In Western European rural areas, partnership governance was most closely associated with the EU's LEADER Community Initiative and is increasingly accepted as an institutional means of promoting endogenous rural development (Furmankiewicz et al., 2010).

Thus, governance can be considered as a process (Douglas, 2018), if we view an improved governance capacity as one of the main results of RDP implementation that enables structural changes and the maintenance of socio-economic improvements far beyond the time period of the policy itself.

Evaluating governance as a product of the implementation of RDP can give us an indication of the improvements of institutions, networks, participation, and empowerment; in other words, of structural changes within the societal and institutional system that can create the basis for further development in the future.

3. Local governance and the adaptive co-management approach for rural areas

As widely supported (MacKinnon, 2002; Mantino, 2008; European Evaluation Network for Rural Development, 2010), the governance of complex systems such as rural areas requires joint action from different levels of government, the presence of learning mechanisms among the actors, and the horizontal and vertical relations established between institutions and informal and formal networks of actors. LEADER action groups are based on regional partnerships between government and private actors that are intended to create local development strategies based on local capabilities. These partnerships are established through the sharing of power and responsibilities between government and local actors in a process of *co-management*. At the same time, co-management is being combined with learning-based approaches. *Adaptive*

¹⁰ As argued by Rhodes (1996: 652–653), the term "signifies a change in the meaning of government, referring to a *new* process of governing; or a *changed* condition of ordered rule; or the *new* method by which society is governed" (emphasis in original) and is based on the emergence of complex multi-level decision-making processes.

management or learning by doing represents a good way to manage diversity, and the uncertainty and complexity linked with it. Subsequently, the approaches of the *co-management* and *adaptive management* have merged to form the *adaptive co-management* (ACM) (Duff et al., 2008; Berkes, 2009).

The ACM concept is very broad and covers a wide range of specific ways to organise management. Empirical studies suggest that collaborative arrangements involving a multitude of actors from various sectors and user groups in management are more likely to establish adaptive processes than other types of systems (Sabatier et al., 2005). ACM promotes access to, and the exchange of, both material and immaterial resources, such as money, technology, scientific knowledge, local experience and legitimacy. Also, co-management is assumed to foster the rise of functional conflict-resolution processes, since co-management structures constitute problem-solving arenas for involved stakeholders (Carlsson and Berkes, 2005). ACM is depicted as a governance system involving heterogeneous actors and cross-scale interactions (Olsson et al., 2004; Cash et al., 2006). Plummer (2009) shows that these network connections (horizontal and vertical) facilitate learning through feedback, emphasise social processes that encourage flexibility and build capacity for adaptation.

Therefore, as Petrick (2013, 713) states, in this type of policy, the focus on organisational principles and governance requires 'a theory of organisation and interaction, not allocation, as is traditionally used in agricultural sector analysis'.

In this respect, ACM seems to suit the study, or investigation, of LEADER governance since it is people-based and refers to the intentional sharing of power and relationships management (Natcher et al., 2005) over resources among stakeholders at different scales and levels (Armitage et al., 2007) within a dynamic learning process. In addition, Duff et al. (2008) postulate that ACM relies on five criteria that are very similar to the ones upon which the LEADER Programme stands: (i) public-private partnerships; (ii) participatory planning; (iii) adaptive management and learning; (iv) adequate financial support; and (v) strong governance towards environmental goals. Simply stated, ACM emerges when social networks mobilise resources for collective action ('we can do something'), social learning ('we can learn from experiments and experience'), and resilience ('we can repeat and adapt to changes') (Laursen, 2013). These processes enable stakeholders to design successful rural development strategies and to anticipate systemic change and build adaptive capacity (Muñoz-Erickson et al., 2007; Berkes, 2009).

4. Methodology

ACM is a governance-based approach that is designed to deal with complexity and uncertainty in natural resources management. Although it has been widely applied to the governance of environmentally sensitive and natural areas (Olsson et al., 2004; Janssen et al., 2006; Armitage et al., 2007; Muñoz-Erickson et al., 2007; Duff et al., 2008; Berkes, 2009; Bodin and Crona, 2009; Plummer, 2009; Sandstrom and Rova, 2010; Laursen, 2013) that have been affected by the same problems as rural areas, there are no specific empirical studies on the adoption of ACM to investigate governance in rural areas linked to LEADER/CLLD.

In this study, the ACM capacity approach is applied for the first time¹¹ to the LEADER context to resolve the problem of a lack of indicators and tautology linked to the 'quality of governance'¹².

This choice is based on Carlsson and Berkes's (2005) suggestion. Because collaborative management is a continuous problem-solving process rather than a fixed state, greater emphasis should be given to the function of the process. The assumption is that increased adaptive capacity

¹¹ As argued by Rhodes (1996: 652–653), the term "signifies a change in the meaning of government, referring to a *new* process of governing; or a *changed* condition of ordered rule; or the *new* method by which society is governed" (emphasis in original) and is based on the emergence of complex multi-level decision-making processes.

¹² The considered measures, in application of the ACM approach to governance evaluation, vary from network properties such as network closure, network heterogeneity and adaptability (Sandström and Rova, 2010), to collective action, social learning and resilience (Bodin and Crona, 2009; Laursen, 2013).

leads to improved management and, ultimately, improved environmental and socioeconomic conditions (Muñoz-Erickson et al., 2007). ACM capacity can be broadly defined as the ability of a system (or the components of that system) to withstand disturbance and be capable of responding to change.

The survey unit is the Local Action Group (LAG), a partnership of local public and private stakeholders that is working in rural areas to implement LEADER. It was chosen for many reasons: Firstly, because the LAG is the expression of the partnership (network) between three different types of local stakeholders (government, private sector and civil society) representing the organisational form of the institutional model of *governance* with different objectives and perspectives (Murdoch, 2000).

Secondly, the LAG as survey unit was selected because, at the local level, in formulating the development strategy for the local area within LEADER, it plays a key role by affecting the quality of public policies and their probabilities of success. Thirdly, its selection occurred because it represents the internal network developed under the LEADER method. The fourth reason relies on Derkzen and Bock's (2009, 75) statement: 'the investigation of rural partnerships can reveal important lessons for the way that new forms of governance develop in practice'. Finally, despite the huge volume of literature on rural partnerships and rural governance, relatively few empirical studies (Armitage et al., 2007; Berkes, 2009; Bodin and Crona, 2009; Sandström and Rova, 2010) have investigated governance processes within these partnerships by applying quantitative analyses of networks characteristics.

The study of ACM is addressed through the 'social network' approach and, in particular, SNA. This approach was chosen in accord with several theoretical and methodological justifications. Firstly, ACM systems are perceived as social networks of actors, co-management networks or networks governance because of their role in making the rules that regulate resource usage (Bodin and Crona, 2009). Secondly, the network perspective implies that either the characteristics of the involved actors or the patterns of their relations (i.e., the network structure) affect actors' abilities to manage resources and the quality of the processes and their respective outcomes (Friedkin, 1981; Wasserman and Faust, 1994). Thus, it is assumed that some kinds of co-management networks are more adaptive than others because certain structural network properties may enhance, for instance, the processes involved in resource exchange and in the legitimacy of the rules. Also, the governance of rural areas involves a multiplicity of actors, different levels of government and participation in the policies and various modalities of the relations between levels of government and actors. In this view, as Marquardt et al. (2012) argue, SNA allows for the systematic assessment of governance, collective action and other qualities of a particular network.

In addition, since concepts such as interactions, relationships and networks between different sectors (government, public sector, private sector and civil society), and different power relations among stakeholders are very central to the concept of networks governance (Thuesen, 2009), the SNA approach enables the empirical investigation of the structural properties of ACM networks within LAG's partnerships (Goodwin, 1998; Ray, 2000; Böcher, 2008). Finally, it was also shown that social networks can be more important than the existence of formal institutions for effective enforcement and compliance with policy regulations.

Starting from the process landscape model, which considers processes hierarchically arranged in a sequence of functions linked to each other so that certain process can be broken down into details or single indicators, the Governance principles of the ACM approach were split into Criteria and, subsequently in Social Network Indicators as shown in Table 1.

Specifically, the Governance principles were collective action, social learning and resilience. However, the detailed relationship between Governance's principles, Criteria and Indicators is explained in detail in the following sections 4.1; 4.2; 4.3.

Tab 1. Governance principles landscape in the ACM approach.

Governance's principles	Criteria	Indicators
Collective action	Centralisation	Network centralisation
	Network density	Network density
	Strength of ties	Contact frequency
	Diversity of stakeholders	Network diversity index
Social learning	Strength of ties	Contact frequency
	Betweenness	Network betweenness centralisation
	Flows of information on the LEADER	Leader information network density
	Flows of information not related to LEADER	Other information network density
Resilience	Leadership redundancy	Automorphic equivalence
	Modularity	Contact frequency
	Diversity of stakeholders	Network diversity index
	Network density	Network density

4.1 Collective action

The study of collective action is especially important for the evaluation of partnership governance in rural development programmes since it relates to the building of institutional capacity meant to last beyond the end of the plan, thus representing a resource for new development projects (Doria et al., 2003). The role of this principle in adaptive governance is to provide an arena for learning and a space where trust-building and conflict resolution can be achieved and where bridges can be built between science, other forms of knowledge, government and nongovernmental actors (Olsson et al., 2004). This principle is in literature (Bodin and Crona, 2009; Ostrom and Ahn, 2008; Laursen, 2013) and is positively associated with highly centralised, dense networks of strong ties.

A first indicator for assessing collective action capacity within the LAGs is the *network centralisation*. It refers to the cohesion of the whole network and indicates the inequality in the distribution of centrality in a network or the degree/amount of variance in the distribution of centrality. In particular, network centralization shows when different actors are organised around a central point called the centre of network (Freeman, 1979).

The index is calculated as:

$$C'_g = \frac{\sum_i [C_g^* - C_{gi}]}{(N-1)}$$

where N stands for the total number of actors in the network, C_g^* is the centrality of the most central point and C_{gi} the centrality of the actor i .

As mentioned above, since the density of relationships within the network is another element that affects collective action, it is measured by *network density*, that is, the ratio between the number of existing relations between members of the LAG, (n), and their maximum possible number, (L) (Wasserman and Faust, 1994):

$$D_N = \frac{L}{n(n-1)}$$

Finally, the strength of the ties is captured by *contact frequency*. The basic hypothesis is that the more frequent the contacts between two subjects, the stronger the relationship between them.

All of these indicators refer to bonding social capital, with the capability of efficiently transmitting information across the network members and creating incentives to behave in a trustworthy manner even for those who have only selfish motivations. However, some caution is warranted, since there is also evidence that the positive effects of network density and of strength of the ties

are not necessarily continuously increasing, but might actually decline at high values. Very high tie density and/or very strong relationships can, in fact, reduce a groups' effectiveness in collective action (Oh et al., 2004).

Finally, collective action is positively influenced by the *diversity of stakeholders*. Some scholars (Folke et al., 2005; Sandström and Carlsson, 2008) show that the presence of different actors or actors with differing expertise increases the chances of cooperation and collective action. The level of diversity within LAG partnerships (i.e., the heterogeneity of the categories to which the various members belong¹³) is measured by the *network diversity index*.

The index is calculated as:

$$NTd = 1 - \frac{\sum_{i=1}^{N-1} (p_i - q_i)}{\sum_{i=1}^{N-1} p_i}$$

where *NTd* stands for *network diversity* and the second member is a form of Gini's concentration index. *N* represents the maximum number of categories that are potentially present in a LAG, $p_i = i/N$ is the proportion of all of the first *i* categories, and q_i is the number of partnership members that belong to the first *i* categories. The index studies the distribution of the variable 'kind of category' and measures the distance between each case and the maximum concentration level (each partner belongs to the same category).

The greater the representativeness of each category, the more various the group (Nardone et al., 2010). A wider variety within the group could provide access to useful resources which are not otherwise available to the group (Macken-Walsh and Curtin, 2012).

4.2 Social Learning

A key feature of ACM capacity as a suitable approach for governance evaluation is the explicit focus on continuous learning among resource users (Folke et al., 2005). Social learning, as a process, involves the collaborative or mutual development and sharing of knowledge by multiple stakeholders about norms, policies and management objectives (Armitage et al., 2007). It is facilitated by boundary organisation and different social environments (Miller, 2001; McNie, 2007). It often involves seeking out socially distant people with whom an actor has infrequent and episodic contact, so-called 'weak ties'¹⁴ (Granovetter, 1973) (measured by means of the *contact frequency*¹⁵) and is facilitated by brokers with high 'betweenness' centrality.

Network betweenness centralisation allows a comparison between different networks in terms of their members' betweenness centrality. This index quantifies the number of times a node acts as a bridge along the shortest path between two other nodes (Wasserman and Faust, 1994). It is so possible to measure the power of 'mediation', of control in the communication, of a subject. A subject that has high values within this index could play a coordinating role within the network.

¹³ As highlighted by Nardone et al. (2010), the partners of local partnership can belong to three different categories: public (public municipalities, other administrations, social services and schools and universities), economic (banks, trade or industrial associations, cooperatives and cooperative associations, enterprises and enterprise associations) or civil society (individuals, cultural or environmental associations, trade unions, and professional associations).

¹⁴ As argued by Oh et al. (2004), in strong-closure groups the resources and information that flow might be ignored or discounted because of strong positive in-group biases, and negative out-group biases.

¹⁵ The basic assumption is that less frequent are contacts between two subjects, the greater will be the weakness of their relationship.

Calling $p_{jk(x)}$ the probability that communication between j and k flows through actor x , N the total number of network's actors – the *network betweenness centralisation* – is so calculated:

$$B = \frac{2\left(\sum p_{jk(x)}\right)}{N^2 - 3N + 2}$$

Within the LAGs, ACM can encourage learning, guiding and support for the process of emergence of something new, such as new ideas, new management arrangements, new decisions, etc.

In this context, bridging organisations have been suggested as a way to promote continuous learning (Berkes, 2009). In the ACM perspective, a high level of betweenness implies the presence of key people entrusted with leadership, vision, and the capability to turn management organisations into a learning environment (Folke et al., 2005).

Finally, social learning is positively affected by dense relationships among actors who exchange information about the LEADER programme or other business topics.

Two very significant indexes are *LEADER information network density*, which is measured by the ratio between the number of relationships between members of the LAG concerning the exchange of information related to LEADER and the total number of relations of exchange of information and *other information network density*. The latter is the ratio between members of the LAG concerning the exchange of information that is not related to the LEADER topic and the total number of relations of exchange of information between the LAG partners.

4.3 Resilience

In rural development studies, the term *rural resilience* has become very popular in recent years, largely as a reaction to the notion of rural decline. It has been associated with improving well-being as a result of adaptive behaviours that permit some level of influence over future development. As argued by McManus et al. (2012, 21), 'In this way it views rural communities as active, dynamic social arrangements rather than passively being left at the mercy of unmanageable external forces'.

The three characteristics that make a system more resilient are redundancy (Berkes, 2009), modularity and diversity in agents and interactions. Redundancy enables a system to maintain its function when a component is lost and the redundant component substitutes it. *Automorphic equivalence* is a proxy variable that captures leadership redundancy. Two actors can be said to be automorphically equivalent if they are linked with the other members of a network in the same way (Borgatti et al., 2002). Therefore, if two network actors are defined as being automorphically equivalent, it means that one actor will be able to substitute for the other if necessary.

Modularity relates to the different parts of a network that, to some extent, can evolve independently, and occurs if the network is polycentric; that is, its links are weak but not dependent on each other. A good proxy for this concept is *frequency of contact*. Finally, in adaptive systems, such as rural areas, agents' functional diversity can increase system resilience¹⁶. This criterion is captured by the *network diversity index*. Other social sources of resilience are social learning (Swartling et al., 2011) and social capital¹⁷ (Schouten et al., 2009).

High values of *network density* may negatively affect the system's resilience, thus resulting in the reduced resilience capacity. Some scholars (Oh et al., 2004; Bodin and Crona, 2009) argue that excessively high density can lead to the homogenization of information and knowledge among internal actors, which results in less efficient resource use and reduced capacities to adapt to changing conditions.

¹⁶ In systems with low diversity, there are fewer opportunities for creation of new ideas, components or connections (Janssen et al., 2006).

¹⁷ Measurement of social capital is beyond the scope of this study. However, in this context, social capital is mostly captured by other indicators of social features, such as: network density, network diversity index, and contact frequency.

Ratner et al. (2013) state that resilience fosters collective action, which supports livelihood security and social learning. Cash et al. (2006) suggest that, within the LAGs, a lack of resilience threatens to: a) undermine the capacity of LAGs to recognise important scale and level interactions; b) maintain the persistence of mismatches between levels and scales in human environmental systems; and c) fail to recognise heterogeneity in the way that scales are perceived and valued by different actors.

5. An empirical application

The case study concerns the application of the ACM for the analysis of the quality of governance within two LAGs operating in Sicily (Italy) under the LEADER Programme.

We have chosen the two LAGs within representative rural areas with opposite social and economic characteristics. The first surveyed case study is the LAG Kalat, which has been operating since 2004 in one of the most economically developed rural areas in Sicily (the province of Catania), whereas the second one is the LAG Rocca di Cerere, which has been operating since 2007 in the province of Enna, which is, in contrast, a rural less developed area than the former. In accordance with the European Union legislation on the composition of Local Action Groups' partnerships (Council Regulation 1698/2005), in both LAGs most partners, that is at least 50%, are private actors. Therefore, the partnership of the LAG Kalat consists of 20 members of which 14 are private actors and six are public actors. In the Rocca di Cerere LAG, the partnership is composed of 28 members of which 11 are public partners and 17 are private partners (Table 2).

Tab 2. LAG's composition (two LAGs from Sicily- Italy).

Kind of organization	LAG Kalat	LAG Rocca di Cerere	Type of partner
Municipalities	5	9	Public
Chamber of Commerce	-	1	Public
Province	1	1	Public
Union Farmers	1	1	Private
Social Cooperatives	6	1	Private
Research Center	2	-	Private
Local development agency	2	-	Private
Foundation	1	-	Private
Union traders	1	1	Private
Private firms	1	2	Private
Cultural association	-	4	Private
Environmental association	-	2	Private
Farmers association	-	2	Private
Professional association	-	1	Private
Union craftsmen	-	1	Private
Union of industrial	-	1	Private
Women association	-	1	Private
TOTAL	20	28	

Data were collected through face-to-face interviews with all LAG partners (n = 48, response rate = 100%). We obtained consent from the Executive Boards of the two LAGs before embarking on the interviews. Data were collected via a structured questionnaire with two sets of questions. The first part of the questionnaire sought to understand the general opinion of the LAGs' members about the importance of the LEADER program and the role of the LAG for the development of the rural areas. In particular, members of the LAG were asked if they knew the contents of the local development strategy, if the partnership of the LAG was considered representative of the territory, the judgment of the degree of participation in the negotiation process for the definition of the local development strategy and consistency between the needs of the area and the financial measures taken by the LAG. The second part of the questionnaire included a contact matrix (see

Table 3) in which each member of the LAG was asked whether and what kind of relationship he had with the other members of the LAG to which he belonged.

Tab 3. Contact matrix used in the survey. Source: our elaboration

Member	Nature of relation with member X of the LAG	Communication frequency with member X of the LAG	In which way do you communicate with member X of the LAG?	kind of shared information with member X of the LAG	The information exchanged with member X of the LAG is for you:
	-formal relation - informal relation -formal and informal relation -I know him, but do not talk -I do not know him at all	- no communication - occasionally - once a year - monthly - weekly - more frequently	- personally -institutional - communication through the LAG -by e-mail -other kind of communication	-Information about LEADER Program. -Informal news not related to the LAG or LEADER. -Business information not related to the LAG or LEADER -Exchange of other kind of information -No information exchange.	-irrelevant -relevant -very relevant
	code number	code number	code number	code numbers (several entries are possible)	code number
Member 1					
Member 2					
.....					
Member n...					

To this aim, each member was given a list with the names of the other members of the LAG and, for each of them, the respondent had to indicate: 1) the nature of relationship (no relation, formal or informal relation), 2) the frequency of these relations (never, occasionally, monthly, weekly), 3) the method of the interaction (personally, institutionally through the LAG, by email, by other means), 4) the information they usually share (information about the LEADER Programme or other types of information), and 5) the relevance of the shared information for their activity (irrelevant, relevant, not very relevant).

The relational data obtained from the contact matrix have allowed us to calculate the SNA network measures reported in the third column of Table 1. For the calculation of these indicators, we used the software UCINET (Borgatti et al., 2002).

Then, in two separate workshops, survey results were presented to partnerships of the two LAGs involved in this investigation.

6. Results and discussion

6.1 Findings from relational data

The first ACM governance principle is the *collective action*. As indicated by the values of network centralization, the network of relationships within the LAG Rocca di Cerere is more centralised (52.42%); that is, it is concentrated around a few members, than the LAG Kalat (22.22%), whereas network density is higher in the LAG Kalat (0.56) than LAG Rocca di Cerere (0.38) (Table 4).

Tab 4. *Collective action*. Source: our elaboration

	Kalat LAG	Rocca di Cerere LAG
Indicator	Value	Value
Network centralisation	22.22%	52.42%
Network density	0.56	0.38
Network diversity index	0.42	0.48
Contact frequency *		
- <i>No contact</i>	43.70%	62.00%
- <i>Occasionally</i>	43.40%	25.40%
- <i>Once a year</i>	1.80%	3.60%
- <i>Monthly</i>	7.90%	7.40%
- <i>Weekly</i>	3.20%	1.60%
* expressed as percentage of contact frequency typologies and maximum number of ties in the LAG's network		

Looking at Figure 1, several subgroups can be identified in the LAG Rocca di Cerere that have an overall negative effect on collective action. However, if members connecting subgroups have the willingness, expertise and motivation to coordinate subgroup activities towards a common goal, this limitation could be overcome. In fact, the presence of interconnected subgroups within the LAG's partnership could positively affect the capacity of the LAG to involve all members and boost collective initiatives within the partnership. The 'key players' in the partnership of the LAG Rocca di Cerere, distinguishable in Figure 1 for the larger size of the nodes (the larger the size of the node, the greater the degree of centrality), could encourage the involvement of all of the LAG's members including the marginal members, that is, those members placed at the edge of the relational network distinguishable for having nodes with a long distance from the 'key players'.

On the other hand, the high degree of centrality can give rise to centralised managements and less experimentation and experiential learning (Leavitt, 1951). Anyway, the optimal degree of network centralisation depends on the phase of LEADER implementation (i.e., ex-ante, on-going or ex-post). For example, mobilising and coordinating members at the start of the LEADER implementation may require a higher degree of centralisation, whereas resolution of complex problems during implementation of LEADER calls for the involvement of many members and, therefore, requires a less centralised network.

Moreover, the presence of a sparse relational network among the LAGs' members could detect the existence of a few or weak ties between actors belonging to different types of organizations and, thus, positively affect the ability of collective action and bridging ties between members belonging to different socio-economic sectors. The identification of different clusters within the partnership of the LAG and the factors that can contribute to the formation of such clusters is an objective that goes beyond this study and could be a cue for future researches.

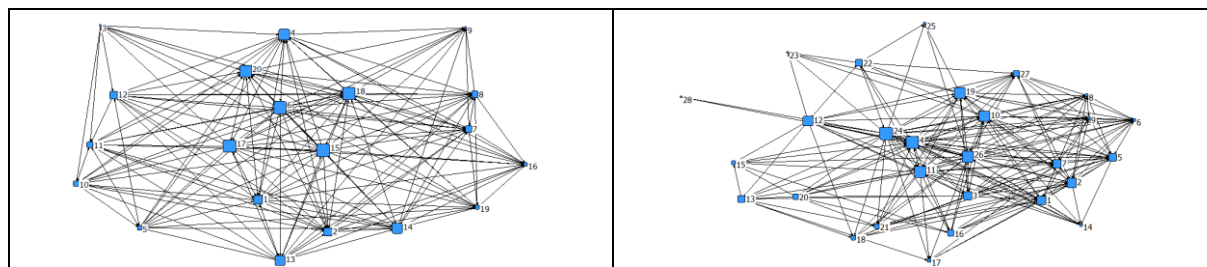


Fig 1. Kalat LAG members' network.
Source: our elaboration

Rocca di Cerere LAG members' network

One factor that positively affects the ability of collective action in the two examined LAGs is the high heterogeneity of the partnership (network diversity index), which could facilitate the creation of synergies between the different kind of organization in the LAG. Through social relations, LAG members work and think together to generate new knowledge or make sense of information from different sources.

In regards to the second ACM governance principle, *social learning*, the low values of the centralisation of the interposition of the network and the frequency of the contacts, registered in both LAGs, reveals the low capacity to share knowledge and experience among LAGs' members (Table 5). This result might reveal a low capacity for 'learning by doing' of the LAGs for addressing new complex issues for rural areas development. In addition, the low density of ties (network density) concerning the exchange of information on the LEADER Programme raises the question of whether or not there is interest in the LEADER Programme among the members of the LAG. Furthermore, based on empirical observations in the two examined LAGs, it has been noted that some actors after the initial phase of involvement, gradually decrease their interest in the activities of the LAG. This could be due to several reasons such as a low degree of involvement during the implementation of the LEADER program. This surprising and somewhat unexpected result is, however, offset by a high density of ties relating to the exchange of information on matters not LEADER that might facilitate new cooperation initiatives among LAGs members also within the LEADER frame.

Tab 5. Social learning. Source: our elaboration

	Kalat LAG	Rocca di Cerere LAG
Indicator	Value	Value
Network betweenness centralisation	10.39%	16.62%
Contact frequency *		
- <i>No contact</i>	43.70%	62.00%
- <i>Occasional</i>	43.40%	25.40%
- <i>Once a year</i>	1.8%	3.6%
- <i>Monthly</i>	7.9%	7.4%
- <i>Weekly</i>	3.2%	1.6%
LEADER information network density	0.36	0.20
Other information network density	0.28	0.27
* expressed as percentage of contact frequency typologies and maximum number of ties in the LAG's network		

The third ACM governance principle (*resilience*) provides controversial results for the capacity of the two LAGs to absorb or buffer external disturbances while keeping their core structure unaltered and their self-organising capabilities in terms of learning and adaptability.

Through the redundancy criterion of leadership, which is measured as automorphic equivalence, it was observed that in both LAGs members, there are few completely equivalents. Results for both LAGs show a low presence of automorphically equivalent members. Figure 2 shows that, in the LAG Kalat, members 7 and 8 form a class, and members 6 and 17 form another class. In the LAG Rocca di Cerere, the first class is formed by members 5 and 8 and the second by members 1 and 2. *It is possible for two members to switch their positions within the network, but doing so results in an 'identical isomorphic matrix'.* The members above are equivalent and their one-for-one exchange does not affect any of the properties of the network. Structures in both LAGs can be broken into multiple and similar smaller ones, revealing resilience in both LAGs.

Kalat LAG											Rocca di Cerere LAG																												
HIERARCHICAL CLUSTERING OF (NON-)EQUIVALENCE MATRIX											HIERARCHICAL CLUSTERING OF (NON-)EQUIVALENCE MATRIX																												
Level	9	3	2	7	8	0	1	1	1	2	1	1	2	2	2	2	3	4	3	7	6	5	8	9	2	4	0	1	2	9	1	6	7	5	8				
0.000	.	.	.	XXX
9.500	.	.	.	XXX	.	.	.	XXX
13.435	.	.	.	XXX	XXX	.	XXX	.	XXX
14.442	.	.	.	XXX	XXX	.	XXXXXX	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.
16.052	.	.	.	XXX	XXX	XXXXXXXX	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX	.	XXX
17.053	.	.	.	XXX	XXX	XXXXXXXX	XXX	.	XXXXXX	.	XXX	.	XXXXXX	.	XXX	.	XXXXXX	.	XXX	.	XXXXXX	.	XXX	.	XXXXXX	.	XXX	.	XXXXXX	.	XXX	.	XXXXXX	.	XXX	.	XXXXXX	.	XXX
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69.275	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXX	

Fig 2. Automorphic equivalence. Source: our elaboration

A low level of leadership redundancy in both of the examined LAGs may inhibit the resilience capacity of the LAG to absorb disturbances and reorganise while undergoing changes in order to retain the same essential function, structure and identity.

However, as already stated, for the collective action principle, the high heterogeneity of the partnerships (as indicated by the network diversity index) can positively affect the resilience of the LAG (Table 6). High values for the network diversity index can be a key source of innovation and renewal in the system, including response diversity. Moreover, a high percentage of sporadic contacts within the two LAGs can be considered as a proxy for weak ties (Granovetter, 1973) among members of different sub-network within the LAG partnership. The presence of weak ties can promote resilience within the LAG because they foster 'bridging' relations among members that do not belong to the same type of organization. Finally, resilience capacity depends on network density. High values of network density (e.g., in LAG Kalat) reveal good ACM capacity, in terms of fostering linkages among members, the potential for innovation and, ultimately, the capacity for resilience.

Tab 6. Resilience. Source: our elaboration

	Kalat LAG	Rocca di Cerere LAG
Indicator	Value	Value
Network diversity index	0.42	0.48
Contact frequency *		
- <i>No contact</i>	43.70%	62.00%
- <i>Occasional</i>	43.40%	25.40%
- <i>Once a year</i>	1.80%	3.60%
- <i>Monthly</i>	7.90%	7.40%
- <i>Weekly</i>	3.20%	1.60%
Network density	0.56	0.38
* expressed as percentage of contact frequency typologies and maximum number of ties in the LAG's network		

6.2 Findings from qualitative analysis

In addition to the network measures described in the previous paragraph, to better understand the capacity of ACM, the members of the two examined LAGs were asked additional questions whose response rates to “yes/no” questions are shown in Figures 3 and 4.

Somewhat surprisingly, in neither LAG do all LAG partners consider that belonging to this grouping is particularly relevant and most do not consider that the LAG plays a critical role for area development. Also significant is the ratio of members who do not feel they were sufficiently involved in the negotiation process that led to the design of the local development strategy and, probably for this reason, they are not aware of its content and do not think that the strategy reflects the real needs of their respective rural areas. In addition, a high percentage of members, especially in the Rocca di Cerere LAG, feel that current LAG partnerships do not adequately represent the area.

The results of the obtained analysis confirm the low ACM capacity of both LAGs. In fact, despite the high heterogeneity of LAG partnerships and the presence of ties between members of the LAGs, qualitative analysis seems to suggest that contacts among LAGs' members can be occasional and not related specifically to the LEADER Programme, and relationships are often among actors in the same socio-economic sector (bonding ties).

Consequently, the potential for ‘collective action’ and ‘social learning’ is low. This could negatively affect the LAG’s ‘resilience’, decreasing its capability to create effective synergies between members operating in different socio-economic sectors (bridging ties).

Recall that only two LAGs were investigated in this study and, therefore, it is difficult to frame these results in a broader context. However, it would seem plausible that the nature and degree of the relations among LAG members, which also depend on the LAG’s overall ACM capacity, are a function of several variables, such as perceptions about the role of the LAG for the development of rural areas. A study of the correlations between network properties and the variables affecting relative values would require application of specific methods beyond the scope of this study.

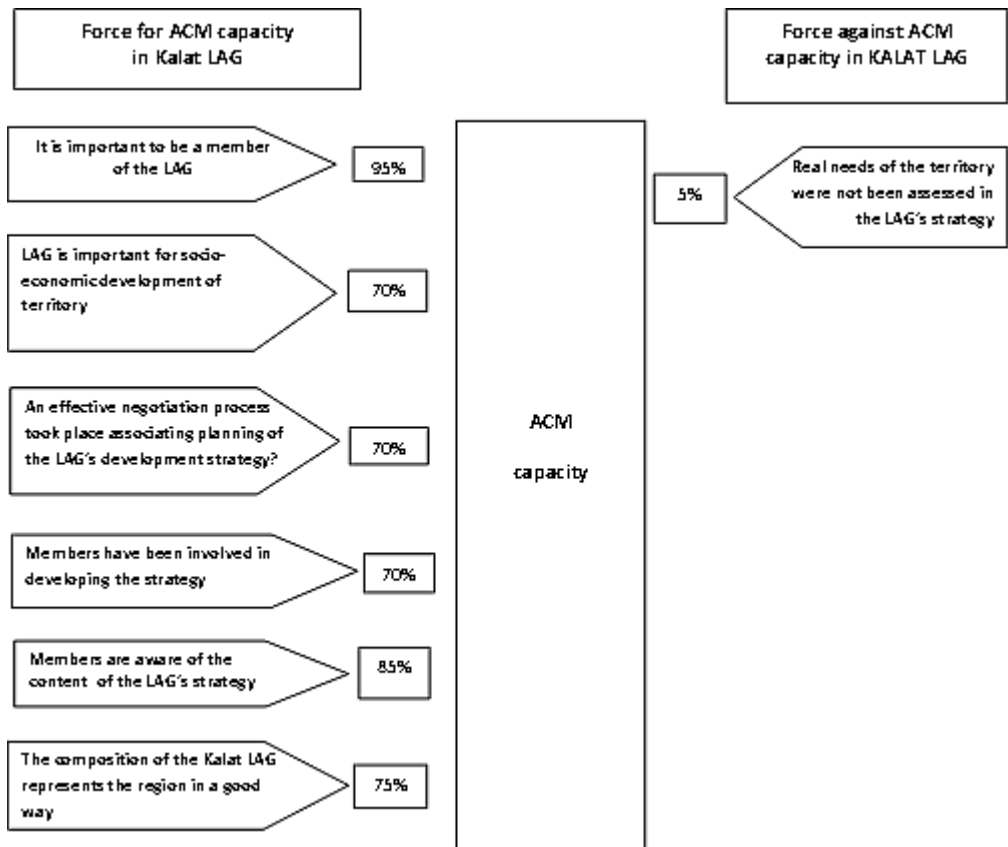


Fig 3. Results of qualitative analysis in LAG Kalat. Source: our elaboration

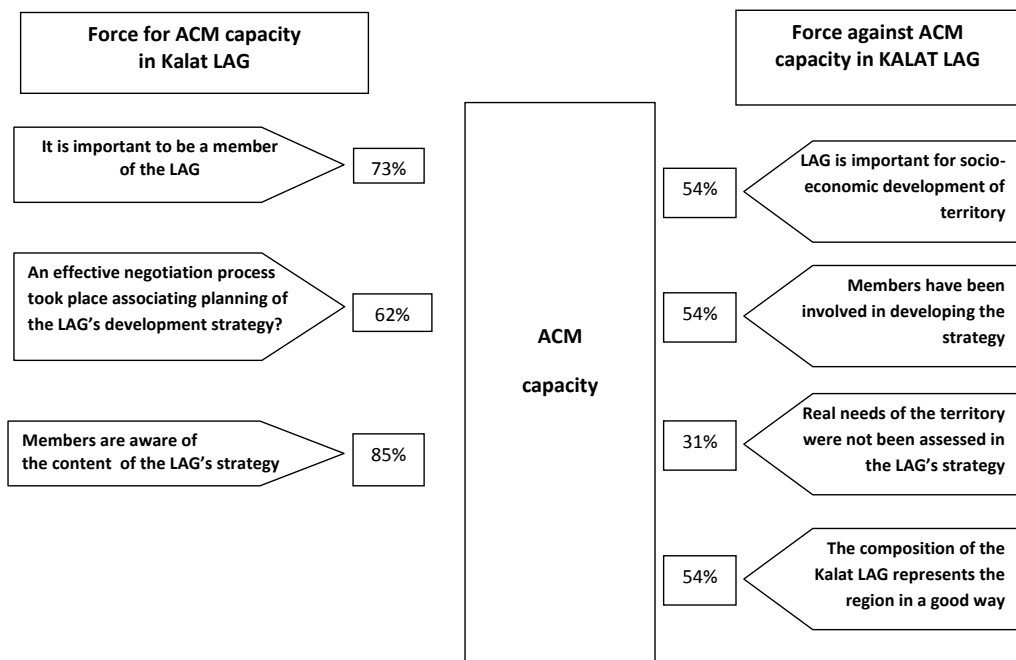


Fig 4. Results of qualitative analysis in LAG Rocca di Cerere. Source: our elaboration

7. Concluding remarks

The evaluation approach proposed in this paper stems from the ACM approach. We assumed that ACM capacity might be a proxy measure of the quality of governance in LAGs involved in the LEADER/CLLD approach implementation for endogenous development in rural areas.

In proposed the ACM approach, we emphasised the relevance of management development agencies, rather than focusing only on LEADER goals. From this perspective, the management strategies of the LAGs and even their goals may have to be adapted during the implementation of LEADER, and a good quality process is essential for the outcomes finally achieved.

We propose the ACM approach to assess the quality of governance within the LAG for some notable advantages. First of all, the re-interpretation of the structure of management development agencies under the LEADER approach from an ACM perspective, give hints to understand if the LAG improves in the short and long term its ability for: 1) collective action, 2) social learning, and 3) resilience. In fact, the ACM approach allows us to assess: 1) the LAGs' bridging capacity actors from a variety of organisations representing different social-economic sectors, 2) the LAGs' capacity to promote social learning as a process that involves knowledge sharing among multiple stakeholders with regard to norms, policies and management objectives, and 3) the capacity of LAGs to adapt to change without a loss of quality through disruptions, whether political, social or economic.

In order to evaluate the ACM capacity within the LAGs, we linked some SNA indicators to each of the three above ACM principles. Specifically, in order to test the applicability of the proposed empirical methodology, we investigated the governance of two LAGs from Sicily (Italy).

Within the two examined LAGs, the capacity of adaptive co-management was low. This result negatively affects collective action and social learning of the LAG's partnership, which means a low capacity for promoting linkages among the LAGs' members. Moreover, the lack of collective actions and social learning, in turn, negatively affects the resilience capacity of the two LAGs; that is, their ability to adapt to rapid and unexpected socio-economic changes.

Survey findings also revealed the existence of some members who occupy a marginal position within the LAG's partnership. This could compromise the achievement of the objectives of the LEADER, which aims to integrate the various socio-economic sectors inside the LAG. Setting out specific measures to be implemented to overcome this gap is not easy. However, it seems plausible to assume that time is an important element for promoting 'trust' among members of the LAG when they are called to struggle with the challenges of the rural world through collective actions and know-how exchanging.

As previously highlighted in the Introduction, the aim of the paper is not to explain the governance or to give some specific information on a particular LAG or situation, rather to propose a methodological approach suitable to investigate the quality of the governance of the local partnerships. In fact, starting from the idea that the current CLLD approach explicitly requires, more than in the past, a public participation to the Local Action Plan definition, it is likely that the quality and the structure of the partnership will affect the quality of the plan itself and, subsequently, the quality of the rural endogenous development of these areas (Sisto et al., 2018).

This paper showed that the ACM approach could represent a new model to assess the quality of the implementation process under the CLLD approach to endogenous rural development. In addition, the ACM approach can to a new way of thinking self-evaluation model of LAGs which places an emphasis on the importance of the relational process among its members. Although the implementation of ACM requires a high effort from LAGs for data collection, such organisational model might be suitable in view of the future EU LEADER programming under the CLLD approach, calling for a flexible implementation process with simple common rules that would improve integration between different socio-economic sectors. This implies that groups work well and that they are likely to produce more collective actions in the future, thus giving rise to a so-called virtuous circle. In this framework, the question that arises is whether vertical governance can help to build networks of horizontal local governance capable of developing favourable structural characteristics.

If, on the one hand, it is true that networks could be created and designed in various forms, on the other hand, for the social network to provide more than just information transfer and for networks to be sustained over time, relational ties must be voluntary. Furthermore, as Macken-Walsh and Curtin (2012, 248) argue, ‘the operation of governance and rural development programmes inevitably differs from case to case depending on local circumstances and the local actors who become involved, there is a range of common circumstances present in liberal democratic regimes, such as a cultivated civil society, that was originally implicated in the broad rationale underpinning the design of governance and rural development programmes’.

In conclusion, the proposed approach would be a starting point for both a broader research agenda in order to design more robust methodologies for the evaluation of ACM capacity in LEADER initiatives and a basis for fruitful discussions on the direction/s that this line of research might take in the future. In particular, we are aware that, in this study, we did not analyse the social dynamics that should lead to the fulfillment of the three proposed types of ACM governance: collective action, social learning and resilience. Likely, the achievement of the efficient level of these ACM principles within a social organisation such as the LAG implies specific equilibrium conditions whose identification requires more inquiries and calls for its implementation in the near future.

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