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Cultural landscapes: evaluating for managing the change

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CULTURAL LANDSCAPES AS DRIVER FOR TERRITORIAL INNOVATION: A METHODOLOGICAL APPROACH FOR THE VALLE VITULANESE

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Abstract
In an effort to identify a situated strategy for enhancement of the Valle Vitulanese, an inner marginal area of the province of Benevento (Italy), the paper structures an evaluative methodological approach that recognizes and interprets the valley as a multifunctional cultural landscape. The outcome is an enhancement strategy that leverages the specificity of each municipality to enable local networks to activate dialogue between recovery and development of tangible and intangible resources. The first territorial action develops in the old town of Tocco Caudio, one of the eight municipalities of the valley, investing on the valorisation of local resources and triggering an incremental process of revitalization, able to strengthen the system of values and relationships which characterizes the context of vast area whose Tocco Caudio is an integral part.

Keywords: cultural landscape, adaptive decision-making processes, NAIADE method

I PAESAGGI CULTURALI COME DRIVER PER L'INNOVAZIONE TERRITORIALE: UN APPROCCIO METODOLOGICO PER LA VALLE VITULANESE

Sommario

Nell'intento di individuare una strategia situata di valorizzazione per la Valle Vitulanese, area marginale interna della provincia di Benevento (Italia), il contributo struttura un percorso metodologico che riconosce ed interpreta la valle come paesaggio culturale multifunzionale. Il risultato è una strategia di valorizzazione che fa leva sulle specificità dei singoli comuni per attivare reti territoriali in grado di far dialogare recupero e sviluppo delle risorse materiali e immateriali. La prima azione territoriale si sviluppa nel centro storico di Tocco Caudio, uno degli otto comuni della valle, investendo sulla valorizzazione delle risorse naturali e antropiche locali ed innescando un processo di rivitalizzazione incrementale, teso a potenziare il sistema di valori e relazioni che caratterizza il contesto di area vasta di cui Tocco Caudio è parte integrante.

Parole chiave: paesaggio culturale, processi decisionali adattivi, metodo NAIADE

1. Introduction

A growing interest in landscape as relevant perspective in sustainable development processes is promoted at the global level by many relevant institutions and through important regional directives and policies. The opportunities presented by a landscape-based approach for the European continent mark out the landscape as a possible new paradigm for the development model, with the aim of harmonious integration of social, economic and environmental factors in space and time (Brandt *et al.*, 2000).

According to Jacobs (2006), that reworks the theory of Habermas (1984), landscape concept can be connected to three big systems:

- *Matterscape*, the real or objective world where the subject evaluates standards and values of landscape;
- *Powerscape*, the regulatory sphere which depends on the indications, regulations and policies as a whole;
- *Mindscape*, the system of perception and thought, which derives from the expectations and emotions of the populations living in and visiting a certain landscape.

The European Landscape Convention (2000) also reminds that landscape can be connected to its objective characters, the ecological-environmental, historical-cultural and settlement aspects, land and economic use; the regulatory and political processes as a whole which contribute to its continuous reconstruction; the social perception of positive and negative values and policies (Voghera, 2011; Agnoletti, 2014).

The landscape is regarded as a holistic and dynamic system of systems (Zonneveld, 1995), and it is an expression of dynamic interaction between ecological, social and economic processes: it is considered as a process rather than as a result; and natural and social processes constantly change the landscape itself, making the dynamics of the transformation a key issue in research and design. Giving shape to the relationship between human beings and natural landscape is a core task for this disciplines and involves civil, agriculture, nature, and environmental based techniques as operative instruments (Nijhuis, 2013). At the same time, landscapes are dynamic and change is one of their properties. Humans have always adapted their environment to better fit the changing societal needs and thus reshaped the landscape. In view of accelerating biological and cultural landscape degradation, a better understanding of interactions between landscapes and the cultural forces driving them is essential for their sustainable management (Naveh, 1995; 2007). Landscapes of the past cannot be brought back, but ways how valuable elements and areas can be preserved and become embedded functionally in the modern urbanized and globalized society must be studied (Antrop, 2005). This challenge requires a better understanding of the interactions between landscapes and the cultural and social forces which have shaped them in the past and are driving them in the present. Their recognition may help mobilize some of these forces for public education and for the decision-making process in land use, which will determine their future fate (Selman, 2009).

A great variety of landscapes is representative of the different regions of the world, result of the combined work of nature and humankind. They express a long and intimate relationship between peoples and their natural environment and create a particular type of landscape, identified as “cultural landscape” (Rössler, 2000). Indeed, certain sites reflect specific techniques of land use that guarantee and sustain biological diversity. Others, associated in the minds of the communities with powerful beliefs and artistic and traditional customs, embody an exceptional spiritual relationship of people with nature. To reveal and sustain

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the great diversity of the interactions between humans and their environment, to protect living traditional cultures and preserve the traces of those which have disappeared, these sites, called cultural landscapes, have been inscribed on the UNESCO's World Heritage List (World Heritage Committee, 2015). «A cultural landscape is fashioned from a natural landscape by a culture group. Culture is the agent, the natural area the medium, the cultural landscapes the result» (Sauer, 1925, p. 343). Cultural landscapes testify to the creative genius, social development and the imaginative and spiritual vitality of humanity. They are part of our collective identity, and cultural identity is strongly associated with the ways in which people interact with their landscapes. Much has been written about the significance of landscape (or the related idea of place) to communities and their cultural identity. The literature ranges from sociological and anthropological work to studies of "place identity" (Hay, 1998; Gray, 2003). A common theme is that both self-identity and group identity are intimately connected with the events and history associated with the tangible environment. Culture and identity are therefore not just about social relationships, but are also profoundly spatial (Stephenson, 2008). Cultural landscapes are the result of consecutive reorganization of the land in order to adapt its use and spatial structure better to the changing societal demands. The safeguarding of landscapes and sites is necessary to the life of humans for whom they represent a powerful physical, moral and spiritual regenerating influence, while at the same time contributing to the artistic and cultural life of peoples, as innumerable and universally known examples bear witness (UNESCO, 1962). Diversity and identity of cultural landscapes are central in the discussion. It is shown that coherence between small composing elements in a broader spatial context is important for the legibility of the landscape and that the ability to tell the (his)story of a place strongly enhances the identity and the overall value. This offers criteria for inventorying and assessing landscapes, which is needed to define future management and development (Antrop, 2005). Cultural landscape can be considered a driver for activating local innovation processes, because it contains values that guide landscape transformation and development: it is expression of the combination of tangible and intangible values, and of complex relations between human beings and ecosystem.

According to a multidisciplinary approach to landscape analysis and evaluation to support land-use decisions and planning process at local level, Section 2 introduces the concept of cultural landscape and the relevance of multi-functionality to provide the services and values required for improving quality of life and activating processes of valorisation; in Section 3, it is analyzed the evaluative framework and the related approaches; in Section 4 the internal marginal areas are recognized as cultural landscape; in Section 5 the problematic context is identified considering the marginal internal area of the Valle Vitulanese, in the South of Italy, where an adaptive decision-making process has been outlined, analyzing the role of cultural landscapes for the identification of a situated strategy oriented to local innovation; Section 6 traces some conclusions.

2. Multifunctional landscapes: from landscape services to cultural landscape services

According to Selman (2009), the complexity of the cultural landscape can be considered as a process of change, where retention and/ or improvement of a landscape's multi-functionality will help to deliver local, resilient and sustainable landscapes, highlighting the value of partaking in a holistic and dynamic approach to planning sustainably for, and through, the diverse multifunctional cultural landscape. The emergent research area of

sustainable multifunctional landscapes aims to integrate human production and landscape use into the ecological fabric of a landscape maintaining critical ecosystem function, service flows and biodiversity retention, but also assisting species in responding to increasing climate pressures, facilitating movement and establishing in new emerging ecosystems. Only by doing this we will be able to maintain some degree of ecosystem service provision into the future (Naveh, 2001; O'Farrell and Anderson, 2010). Indeed, ecosystem services have gained a key role in the scientific research, in order to investigate the close relationship between ecosystems and human well being in an anthropocentric perspective. The landscape consists of the natural environment, artefacts from past human use, current human activity and even social thinking. The proposed systems of classification of ecosystem services, starting from the theoretical model of Millennium Ecosystem Assessment (MEA) (Braata and de Groot, 2012), identifies four major types of services (Attardi *et al.*, 2014):

- supply services of physical assets that produce direct benefits to people;
- services carried out by ecosystems in regulating environmental processes;
- services related to cultural and spiritual needs of the community;
- support services, which do not provide direct benefits to people but are required for the functioning of ecosystems.

In direct relation with them, human well being and its socio-economic conditions may be affected in terms of safety, survival, enjoyment of basic materials for life and evolution, psychophysical health and opportunities of social relations.

Burkhard *et al.* (2014) affirm that ecosystem service maps are useful for sustainable decision making, for example by identifying supply-demand mismatches across landscapes and their changes over time. They should not be used to enhance human exploitation of natural resources. Therefore, appropriate institutions to sustainably manage ecosystem services on spatial and temporal scales that match the scales of the service supply and demand should be established. Ecosystem services provides a potentially valuable framing for environmental assessment, but that it requires a pragmatic, context specific consideration of how ecosystem services can be used to help address some of the common problems with current environmental assessment practice. Those responsible for plans, programmes and projects, therefore, need to have the courage to allow practitioners to use and develop it. Statutory environmental authorities and consulters need to engage with proponents and practitioners in a robust debate over the practical application of an ecosystems approach on a case by case basis, ensuring that the scoping stage is used effectively to reach agreement on the adopted methodology, recognising both the benefits and limitations (Baker *et al.*, 2013). Incorporating ecosystem services analysis has a potential to fix some of the current shortcomings of impact assessment practice, but as with any other tool, its actual contribution depends on how well practitioners will understand both its potential and inherent limits. On the other hand, if ecosystem services are used as an integrative approach to all usual activities of environmental and social impact assessment, it could mean an opportunity to improve the impact assessment process and its outcomes (Sales Rosa and Sànchez, 2015). The ecosystem services approach is an established framework for the balanced evaluation of ecological, economic and social landscape resources (Syrbe and Walz, 2012). It promotes functional synergies as well as trade-offs among various benefits resulting from ecosystem processes. Spatial aspects of heterogeneity and configuration play a major role in maintaining biodiversity and eco-

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system services and hence in human wellbeing. Cultural artefacts also contribute to landscape functionality. Cultural services, in particular, such as scenic beauty, ethic values, or educational values can therefore be described multi-dimensionally or qualitatively.
The term "ecosystem services", because of the underlying areal aspects, should therefore be enlarged to "landscape services" (Termorshuizen and Opdam, 2009). This is justified by the strong reference to spatial characteristics and a more integrative approach, which includes neighbouring processes (Syrbe and Walz, 2012).
In literature landscape services (LS) are examined as a further specification of ecosystem services considered at a regional scale (Limburg *et al.*, 2002), where diverse and dynamic human and environmental forces and relations need to be considered. Landscape, as opposed to ecosystems, can be identified as an action context for not strictly ecological disciplines, and for many tangible and intangible services provided to humans (Musacchio and Wu, 2004; Musacchio, 2009) through whom the conditions for the sustainable development of the territory are to be found. In this perspective the cultural landscape services (CLS) approach in a wider sense allows to take social/cultural services better into account because they depend strongly on heritage assets, structural characteristics, historical conditions end even cultural specifics (Syrbe and Walz, 2012). Indeed, landscapes are not determined solely by natural processes; each landscape is also assigned a particular "identity" by human perception. The concept of landscape identity has historical, geo-morphological, cultural and social aspects that are complementary to ecological aspects. To ensure the effective planning and management of future landscapes it is therefore necessary to understand how people perceive their environment and changes in it, and to have public support. The explicit recognition of the existence of multiple and interdependent values establishes both the conceptual and empirical foundations for understanding how these value categories can be applied to a decision-making context. Innovative processes of cultural landscape evaluation and planning are based on the integration of knowledge to solve current complex problems and require economics, sociology and other disciplines involved with public administration to be included together with ecology at landscape level, integrating traditional landscape ecology and disciplines of design, planning and management, to improve the use of insights and data in spatial planning and implementation.

3. Multi-methodological evaluations for adaptive decision-making processes

A complex system can't be explained with a unilateral representation. It means considering only one of its subset, in a partial view where the interconnected phenomena are presented as discrete. Given that society-nature relationships are characterized by complexity, uncertainty and political contentiousness: a complete and impartial view is rarely, if ever, possible. To express this complexity in a satisfying way and to identify its peculiarity, it's essential to think for complex values (Keeney, 1996). Values can be tangible and intangible, hard and soft, objective and subjective and can be interpreted according to multiple and different points of view (Fusco Girard and Nijkamp, 1997). Complex values correspond to multiple forms of knowledge whose relations and dynamics reflect different value interpretation (Zeleny, 1982). Therefore, an evaluation process in complex system is complete and impartial only adopting integrate and transversal approach and working in a multidimensional perspective. The so-called multi-methodological evaluations facilitate an inclusive lecture of the complex context combining classic planning tools (qualitative and

quantitative GIS analysis) with citizenry needs, interests and goals (multi-criteria, multi-actors analysis). The multidimensional perspective permits to aggregate plural insights highlighting the most sharable values that address a "situated strategy" (Liew and Sundaram, 2009). At the same time, to define a site-specific strategy, evaluations need to be "adaptive", multi-methodological besides. An adaptive evaluation is model after the context; it doesn't consider only the complex context conditions but also their interpretations that address collective choices. Collective choices combine social discourse and political institutions. With the so-called adaptive co-management, social dimension plays an essential role in policy process because a broad civic engagement legitimates policy actions (McDaniels and Gregory, 2004). Indeed, adaptive evaluations express the complexity of interlinked social, technological and ecological development relating to the contingency of human action in a context of long-term systems change, in which nonlinear, interdependent and pervasive process, revising policy tools and recalibrating goals (Voß and Kemp, 2006). Incorporating multi-methodological evaluations into adaptive co-management process is fundamental: evaluations identify context complexity, but the adaptive approach permits to adapt the same complexity to the change through mutual learning on the individual, community, institutional and policy levels, seeking to overcome the substantial gap between theory and practice (Arvai *et al.*, 2006).

The evolution of evaluation can be outline in four generations (Guba and Lincoln, 1989):

- the first generation considered measurement to be central with emphasis placed on the technical application of suitable instruments;
- the second generation, known as formative evaluation, along with the idea of measurement, stressed the description of patterns pertaining to stated objectives;
- the third generation extended the role of the evaluator to explicitly form opinions;
- the fourth generation, elaborated to make up for the shortcomings of earlier approaches, is responsive evaluation that can actively engage founded on a constructivist paradigm which consider dialectic process and constructed basis for reality, including public participation, collaboration, integration and pluralism of knowledge.

The fourth generation perspective is based on complex adaptive system thinking, focusing on "adapting" to different kinds of feedback and drawing attention to process as well as tangible and intangible outcomes. Such approach explores a broader decision context that can tailor the decision situation to complex value-focused thinking. Complex problems have many implications connected to uncertainty and this requires the adoption of evaluation tools that are rigorous from a scientific point of view (Funtowicz and Ravetz, 1991). Therefore, the attention is shifted from the result of the decision process to the scientific process itself, which must be as plural as democratic as possible in order to address correctly rapid social and institutional change and ensure the legitimating of multiple viewpoint Munda (2004), to constantly "adapt" the situated strategy on situated values e their interpretations. Within an integrated perspective, adaptive evaluation underpins dialogue between knowledge and values, translating such dialogue into the selection of strategic goals and actions; it enables the identification of key values and related meanings, the exploration of opportunity and the creation of alternatives. The relationship between multiple knowledge, multidimensional values and possible strategies is fluid, dynamic and incremental, requiring continuous interaction among/with local stakeholders and decision-makers. This relationship develops progressively through continuous feedback loops thus activating and maintaining learning mechanism (Cerreta,

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2010; Cerreta and Diappi, 2014). In recent years research has been oriented to testing adaptive and multi-methodological evaluation processes, to fill in the gap between theory and practice e to verify integrated approaches effectiveness. Many critical analyses wanted to identify common problems among current environmental assessment practices and public participation; just as many showed reports of successfully ended experimentations.
Effective decision-making processes in complex settings require an integrated framework for coordinating shared thought regarding the environmental, ecological, technological, economic, social, political and institutional factors relevant to identifying, evaluating and selecting suitable alternatives. Integrating heterogeneous information and knowledge with respect to human aspirations and technical applications demands a systematic and understandable framework for organizing three main key components (people, processes, and tools) in order to make structured and valid decisions. The situated combination and selection of these three components is essential for the definition of an evaluative approach in decision-making process related to complex context.
Over the last two decades many studies show that a decision-making process is more likely to succeed when it is possible to evaluate progress toward clear and measurable goals and use this information to adapt the specific activities over time (Colombo *et al.*, 2012). In many cases, most practitioners avoid evaluation and adaptive management, or do it poorly and this can mean that they pursue ineffective strategies or effective but unable to demonstrate success. According to the ecosystem management perspective (Grumbine, 1997; Millennium Ecosystem Assessment, 2005) to improve the impact of community-based projects it can be relevant generating new adaptive organizations by building on-the-ground capacity for evaluation and adaptive management, including:

- "big-picture thinking", a systems approach that recognizes the complexity and dynamism of ecological and social systems;
- ecological, social and political boundaries to define management units and objectives;
- ecological integrity, an integrated approach to management and conservation that aims at maintaining or restoring ecological processes specific to particular landscape units;
- social vitality, an inclusive approach to management and conservation that aims at restoring or activating social relations interrelated to local context;
- data collection, oriented to developing the adequate scientific information and common knowledge needed to make sound management decisions;
- monitoring, a push to increase monitoring efforts so as to enable more effective evaluation of natural and social conditions targeted by program activity;
- interagency cooperation, as a recognition that ecological and social boundaries rarely correspond to jurisdictional boundaries, thus requiring the need for collaborative decision-making and management;
- humans embedded in nature, an acknowledgement that human beings are a part of nature and are thoroughly dependent on "ecosystem services" provided by the surrounding biotic and a-biotic environment;
- adaptive management, an approach to management that recognizes complexity and uncertainty, and that builds on the knowledge and experience accumulated in and through program implementation;
- organizational change, the need for institutions to transform organizational structures, work plans, incentive structures, budgets, and evaluation protocols in order to advance main objectives;

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– value orientation, a recognition of the value-laden character of local resource management decisions and policies.

An adaptive evaluation process, articulated as a step-by-step and interactive process, can increase project efficiency and effectiveness and builds support by documenting success, spanning multiple temporal scales, where multi-scalar spatial analysis and place sensitivity are critical issues. Indeed, Norton and Hannon (1998) assert that sense of place values emerge at the local level and are highly dependent on the context at that level, representing the positive sense of community that arises between a people and the place in which their culture has been defined. These values are therefore "scaled" because they are associated with a particular level of a multi-scalar system. A process that includes contextual, place-sensitive debate and collaboration is key for adaptive assessment to become functional in informing policy (Chapman, 2016). Across all scales of place and time it is now particularly useful, because solutions in a decision model on multiple scales provide a common framework for the reconciliation of local differences and their integration into a broader context. Indeed, taking into account changing social values as a consequence of sequential policy decisions, and putting into place action-oriented, problem-focused, iterative, multi-scalar and place-sensitive processes drive the choice of model parameters and the execution of their outputs.

4. Internal marginal areas as cultural landscape

As in former times, also in our time there is no single direction in landscape development. Characteristic is, however, the rapid change in production and information technology as well as demands from society, which changes the economic base of the landscape households completely. Land use profits in one region are expanding spectacularly, but diminish equally spectacularly in other regions. Everything seems possible: people are shopping in the landscape. The "unity of the world" is definitively over: man is at a distance from landscape. This development of our shopping society with its multiple demands results in our postmodern landscapes in a complex mosaic of different landscape types. These display different intensities and styles of man's control (high → low) whose products are all desired by society (Maciocco, 2008):

– industrial production landscapes: landscape as an industry;
– overstressed multifunctional landscapes: landscape as a supermarket;
– archaic traditional landscapes: landscape as a historical museum;
– marginalized vanishing landscapes: landscape as a ruin;
– natural relict landscapes: landscape as a wilderness.

When in distant rural areas the urban demands are the main force behind a bifurcation in the countryside, marginalized vanishing landscapes born: intensification and increasing of scale of farming on the most suitable sites and extensification or abandonment on less favourable sites. In the marginalized parts of the European countryside, the old cultural landscapes are vanishing. Where they are abandoned, spontaneous nature development takes over and within a couple of decades dominates landscapes that were used intensively for centuries (Vos and Meekes, 1999). Constitution of Italian Republic protects landscape in the 9th article: «The Republic promotes the development of culture and of scientific and technical research. It safeguards natural landscape and the historical and artistic heritage of the Nation». The concrete is different. Italian territory is largely made up of small towns. 70,4% of Italian municipalities has less than 5000 inhabitants (Tortorella and Marinuzzi,

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2013). These territories are often characterized by a low population growth and immigration rate, and a high old age index. Both indices suggest a limited dynamism of municipalities, characterized by few people commutes. Negative population structural conditions, services lack, work shortage, productivity depletion along with inability of these areas to attract new business and to promote their own identity, make small towns in disadvantage condition (AmbienteItalia, 2003). This is the fast Italian fordization outcome that causes, at the same time, industrial urban hubs development and rural areas weakening. These territories, wherein extreme geographic marginality, environmental instability, demographic feebleness produce a deep socio-economic inconvenience, identified with internal marginal areas (Legambiente, 2012). Marginalization phenomenon spreads quickly to wider areas and relentlessly increases. It is a dynamic process, therefore it is reversible. Italian internal marginal areas are lately begun relevant again in government activities that appreciate their remarkable development potentialities. However, these territories escaped modernization and possess an authentic but forgotten heritage made of unique architectures, folkways and landscapes (Bassanelli, 2010). It is the Italian cultural landscape, that consists of the natural environment, artefacts from past human use, current human activity and even social thinking. Cultural landscape of internal areas is the combination of tangible and intangible values, is a complex relations organism between social-system and eco-system.
Contemporary European policies that aim to enhance knowledge about and conservation of cultural landscapes are particularly relevant for marginal areas. The conservation of traditional landscapes is an issue of growing importance. A preliminary inventory is an essential tool to acquire more complete knowledge of the consistency and variability of the landscapes in a given area, whether in a single nation or throughout Europe (Cullotta and Barbera, 2011). Good perspectives for the future of the old cultural landscapes of Europe are based on the following observations (Vos and Meekes, 1999): a rich and stable society demands a broad spectrum of functions from our landscapes, including nature and landscape; many farmers move towards multi-functionality, including landscape management, when they gain profits from it. In this development they display quite different farming styles and attitudes; there is a growing political and public engagement with a "healthy" countryside as part of regional cultural heritages, especially at international level. It is also acknowledged that the scale at which changes manifest themselves seems to be increasing and that these changes have to be addressed at an adequate level. Many solutions to problems, however, have their origins at a very local level, and high level targets can only be achieved with the support of local or regional actors (*think globally, act locally*); these developments coincide with a shift towards decentralization and denationalization, which favours a Europe of the regions with their own cultures, products and landscapes.

5. The Valle Vitulanese: a situated synergistic strategy for internal marginal areas

The Valle Vitulanese, in southern Italy, in Province of Benevento (Fig. 1), is rounded by Taburno-Camposauro, massif of Southern Apennines, and Calore River, and comprises eight small municipalities, included in Regional Park of Taburno-Camposauro: Vitulano, Torrecuso, Foglianise, Cautano, Campoli del Monte Taburno, Paupisi, Castelpoto, Tocco Caudio. The territory is mainly rural and woods-covered, and is divided in three regions: Benevento Hills, Calore Hills and Taburno-Camposauro Hills.
The Valle Vitulanese territory is introvert, marginal, de-cohesive and affected by a slow depopulation, characterized by a strong and incremental economic fragmentation, in con-

trast with the physical and morphological compactness that characterizes it. Four of eight municipalities are identified as disadvantages rural areas. This context can be described as a rich and complex system, expression of a multifunctional landscape characterized by some relevant cultural landscape services, that links natural and anthropic environment, where inputs for a sustainable development process can be identified.

Fig. 1 – The Valle Vitulanese, Province of Benevento (Italy)

An adaptive decision-making process, including multi-methodological assessments, supports the elaboration of a site-specific development strategy by: the identification of specific indicators for cultural landscape services (CLS) assessment, and the processing of spatial complexity maps expression of the Valle Vitulanese different CLS; the definition of a multi-group decision problem to identify the weakest municipality of the study area, where CLS are less satisfactory and from where the development strategy could be activated. The methodological framework is structured into the following phases (Fig. 2):

1. *knowledge* of CLS, according to Hard Systems Analysis and Soft Systems Analysis approaches;
2. *classification and processing* of CLS indicators, by GIS Spatial Analysis tools;
3. *elaboration* of a Multi-Group Analysis through the application of NAIADE method to select a ranking of shared strategies;
4. *identification* of feasible actions by means of a Financial Analysis.

In the first phase the implementation of Hard System Analysis instruments (Breiling, 1995) allows to elaborate, for each CLS category, specific indicators about natural, anthropic and built environment considering statistical data, traditional cartographic analysis, current regulations, institutional database and web open database (Fig. 3); on the other hand, the application of Soft System Analysis tools (Rosenhead and Mingers, 2001) produces

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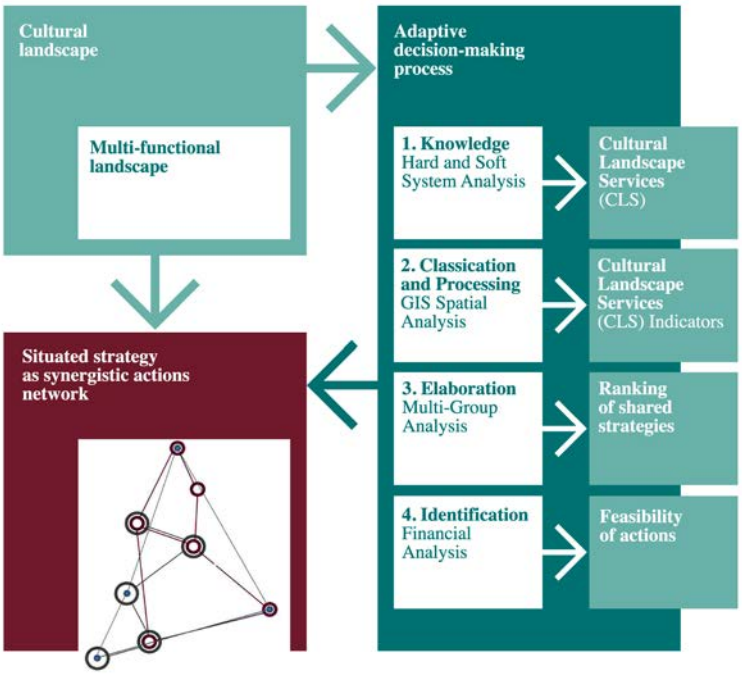
subjective perceptions of CLS, outcomes of in-depth interviews of stakeholders selected categories.

Fig. 2 – The methodological process



In the second phase the knowledge on the CLS in Valle Vitulanese is explained into five main categories: *aesthetic-environmental services*, *identity services*, *historic services*, *scientific-educational services*, *touristic services*. For each category three spatial indicators, considered the most representative, are identified: *aesthetic-environmental services*: landscape diversity; safeguarded and urbanized areas; scenic walks; *identity services*: certificate farms; certificate cultivations; "Comuni del tipico" label; *historic services*: old town centre usability; churches and hermitages; folkways; *scientific-educational services*: caves and geosites; educational farms; museums; *touristic services*: receptive supply variety; railroad station distance; mobility. For the different CLS categories, spatial indicators are processed using GIS tools, in order to elaborate a synthesis map able to express the landscape complexity of the territory and classify the municipalities according to a different level of CLS density, evaluated as *high*, *medium* and *low* (Fig. 4). In the third phase, starting from the Valle Vitulanese stakeholders map, a Multi-Groups Analysis has been elaborated to identify a ranking of the perceived attractiveness for the eight municipalities. Taking into account that, in general terms, the prosperity of a place is directly related to its competitiveness (Porter, 1998), and that along this line there is a growing awareness that regions may build their competitiveness leveraging their cultural

heritage (Sasaki, 2004), a large consensus is related to the key role of tourism in the development and competitiveness of some regions (Lazzeretti and Petrillo, 2006), especially in relation to the tourism enhancement of cultural heritage in cluster arrangements (Lazzeretti *et al.*, 2008; Fusco Girard and Nijkamp, 2009).

Fig. 3 – Hard System Analysis: from data to indicators

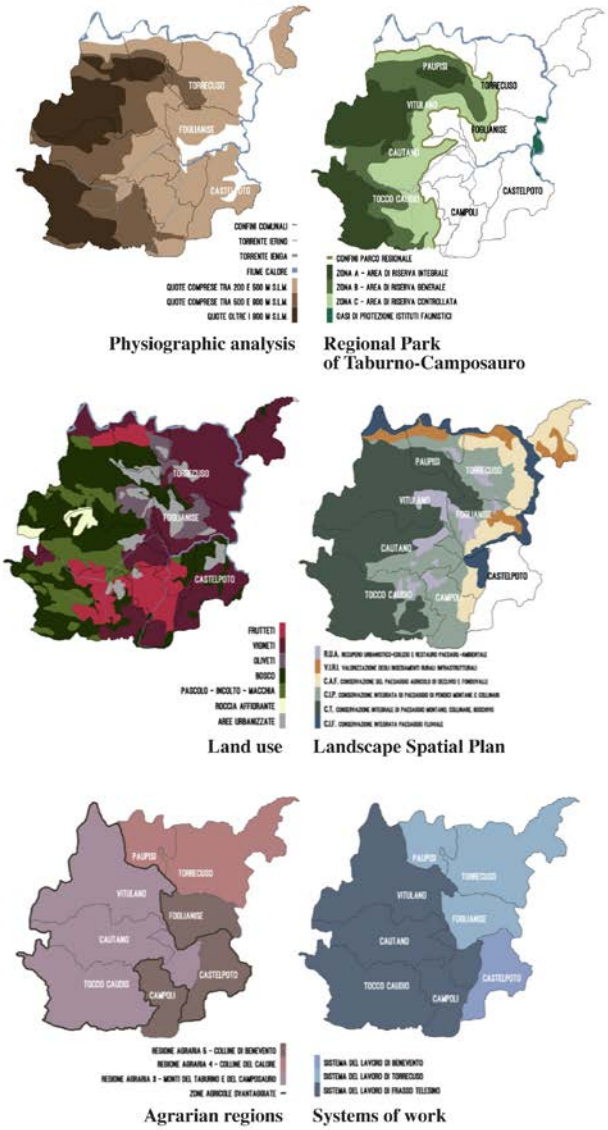
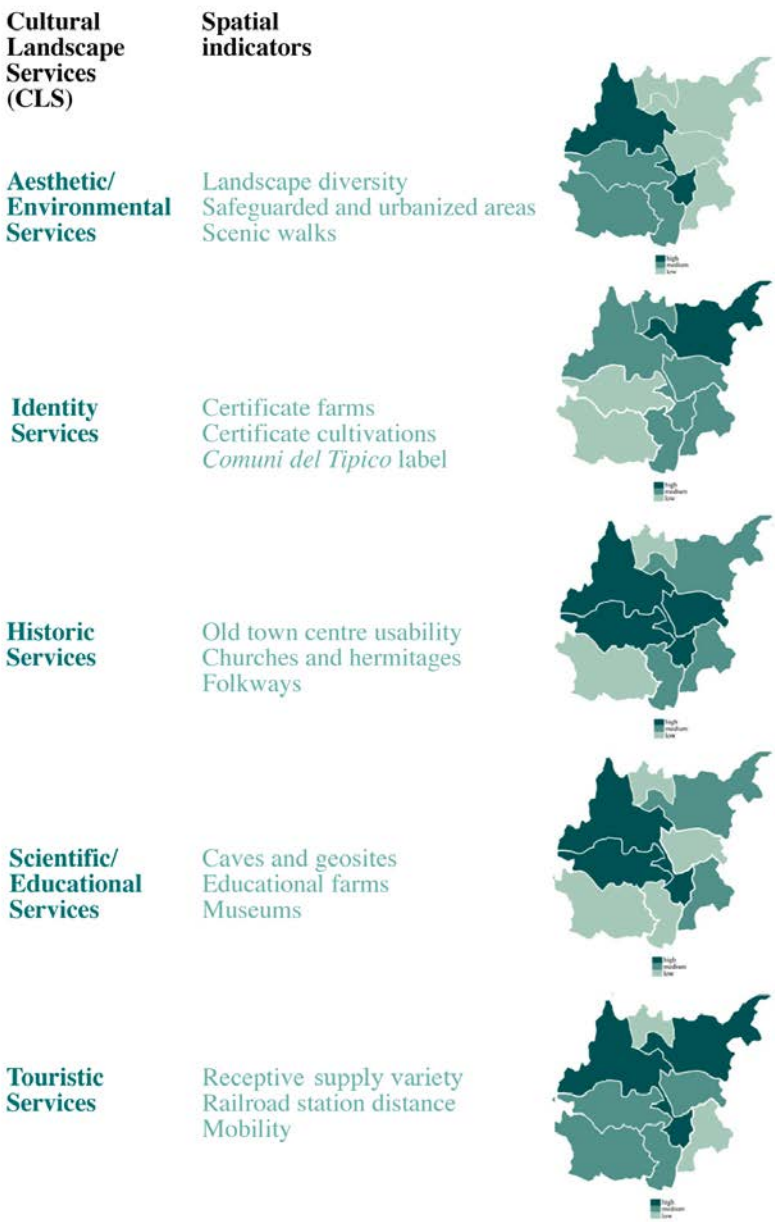


Fig. 4 – Cultural Landscape Services: spatial indicators



Clusters are believed to increase regional competitiveness, given that they contribute positively to innovative processes, facilitating relations with other institutions, better enabling the consumer needs, driving knowledge and information needed for development

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(Porter, 2000; Malmberg and Maskell, 2002). The result is an increasing debate in literature on tourism clusters (sometimes overlapped with cultural clusters) and destination management as a means to reach regional competitiveness (Alberti and Giusti, 2012). According to these researches, the main goal of the development strategy for Valle Vitulanese is to create an autonomous tourism-based work system, to stop the impoverishment and depopulation process. Therefore the most relevant stakeholders are identified with four groups of tourists, each one with different interests:

- Group 1: tourists with interest for nature and environment;
- Group 2: tourist with interest for wine and food;
- Group 3: tourist with interest for historic and cultural heritage;
- Group 4: tourist with scientific interest.

Considering the results of in-depth interviews conducted in the first phase of the decision-making process, in applying the Soft System Methodology, it was developed a frequency analysis to explain the four groups of stakeholders points of views and to identify the compliance between services supply of each municipality and the satisfaction grade of each stakeholders group concerning these same services.

The Multi-Group Analysis has been elaborated with the application of the NAIADE (Novel Approach to Imprecise Assessment and Decision Environments) method (Munda, 1995). It is a discrete multi-criteria method whose impact matrix may include either crisp, stochastic or fuzzy measurements of the performance of an alternative with respect to a judgment criterion, thus it is very flexible for real-world applications. This makes it particularly suitable for economic-ecological modelling incorporating various degrees of precision of the variables taken into consideration. NAIADE also performs an equity and conflict analysis in order to identify those alternatives which could reach a certain degree of consensus or would provide a higher degree of equity among different interests groups. It is a very flexible method for decision problems where fuzzy uncertainty or indeterminacy is recognised. Indeed, fuzzy uncertainty regards not only to the difficulties to set probabilities about the occurrence of a particular event but especially to the difficulties to describe the event itself in an unambiguous manner.

For the case study of the Valle Vitulanese NAIADE method provides a ranking of municipalities, considered as alternatives, according to the four groups of stakeholders preferences, and indications of the distance of the positions of the interest groups and possibilities of convergence of interests and/or of coalition formation. The equity analysis is performed by the completion of an equity matrix (Fig. 5) where a similarity matrix is calculated. It sheds light upon the level of decision conflicts among the different interest groups and highlights the possible formation of coalitions building a dendrogram of coalitions, and showing the impact of each alternative, as perceived by the tourists groups. In this way, NAIADE gives the following information: distance indicators between the interests of the different stakeholders groups, as an indication of the coalition formation possibility, or interest convergence; rankings of alternatives for every coalition, in accordance with the impacts over the stakeholders groups, or the social compromise solution (Fig. 6). In this way, each municipality is evaluated on a semantic scale (perfect, very good, good, more or less good, moderate, more or less bad, bad, very bad, extremely bad) by each tourists group in order to identify the municipality that offers fewer services, or rather the weakest municipality of Valle Vitulanese. From the equity matrix, a similarity matrix is computed and gives an index, for each pair of interest group, that expresses the

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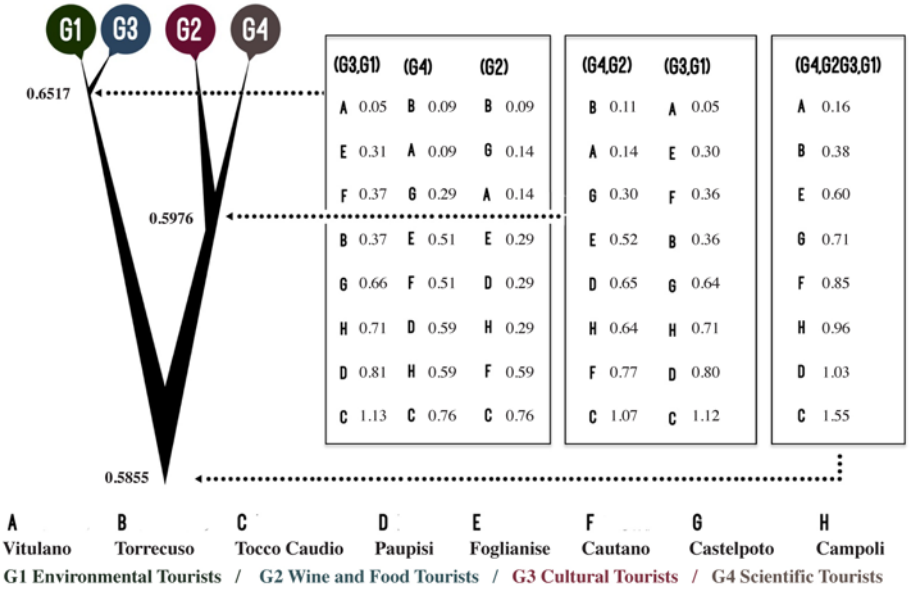
similarity of judgement over the alternatives. The outcome is a dendrogram of coalition that shows possible coalitions formations for decreasing values of the similarity index and the degree of conflict among tourists groups. The final ranking of municipalities expresses the realization of a higher consensus among groups, but also it shows the weakest municipality of Valle Vitulanese from which the development strategy could start.

Fig. 5 – The multi-group analysis: the equity matrix

Groups \ Alternatives	Vitulano	Torrecuso	Tocco Caudio	Paupisi	Foglianise	Cautano	Castelpoto	Campoli
Environmental Tourists	VERY GOOD	MORE OR LESS GOOD	MORE OR LESS BAD	MODERATE	MORE OR LESS GOOD	MORE OR LESS GOOD	MODERATE	MORE OR LESS BAD
Wine and Food Tourists	MORE OR LESS GOOD	GOOD	VERY BAD	MODERATE	MORE OR LESS GOOD	BAD	MORE OR LESS GOOD	MODERATE
Cultural Tourists	VERY GOOD	MORE OR LESS GOOD	VERY BAD	MORE OR LESS BAD	GOOD	MORE OR LESS GOOD	MODERATE	MORE OR LESS GOOD
Scientific Tourists	GOOD	GOOD	VERY BAD	BAD	MORE OR LESS BAD	MORE OR LESS BAD	MODERATE	BAD

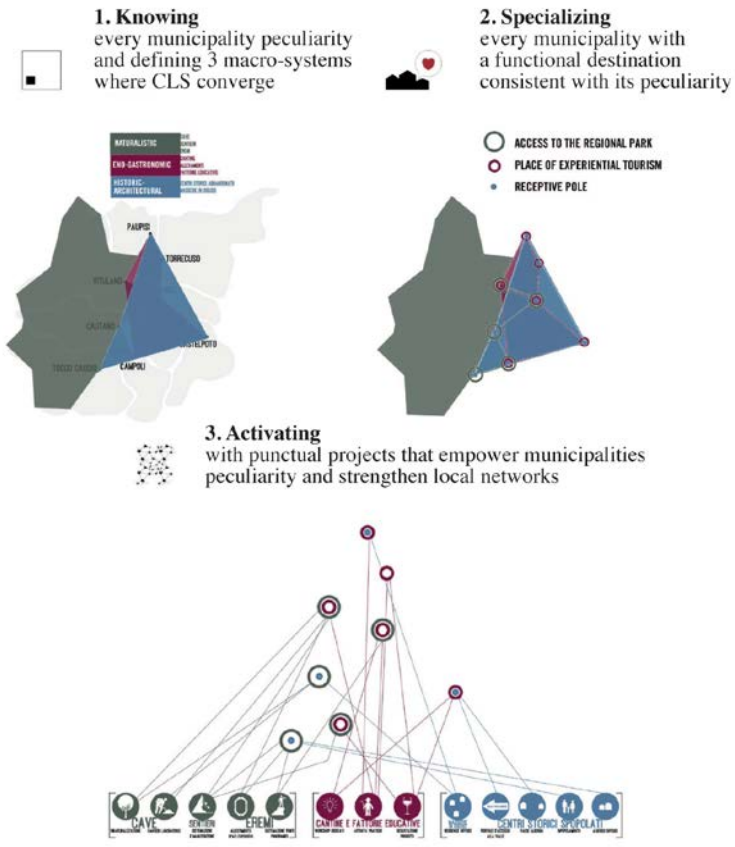
Fig. 6 – The multi-group analysis: the dendrogram of coalition



The winning coalition among stakeholder groups identifies the weakest municipality as Tocco Caudio. Its CLS supply is insufficient, and it isn't attractive for any group of stakeholders. Comparing the CLS spatial indicators (Fig. 4), expression of landscape values, where Tocco Caudio is characterized by a medium value for the aesthetic/environmental and touristic services and a low value for the identity services, historic services and scientific/educational services, with the point of view of the three coalitions, it is evident that whatever development strategy should start from Tocco Caudio.
In the fourth phase, in order to construct a territorial network among municipalities, able to reactivate complementary and synergistic processes, it is essential (Fig. 7):

- knowing every municipality peculiarity and defining three macro-systems where CLS converge: naturalistic, eno-gastronomic, historic-architectural;
- specializing every municipality with a functional destination consistent with its speculiarity;
- activating with punctual projects that empower municipalities peculiarity and strengthen local networks.

Fig. 7 – The valorisation strategy



The situated strategy identifies punctual projects that include staging of construction yard labs in disused mines; placement and maintenance of natural pathways; staging of exhibition itinerary in hermitage panoramic points; workshops and wine-tasting in educational farms; planning of diffused hospitality system in abandoned manor farms of Cautano and Paupisi, in Castelpoto old centre, and in Tocco Caudio old centre. This last action, the most radical in expected interventions, is a reuse and transformation project, necessary for the landscape restoration of the Valle.
The village of Tocco Caudio lifts up from a tuff rock and dominates the underlying valley. It was abandoned after the 1980 earthquake. Realizing a diffused hotel, an Italian "Albergo Diffuso" (AD), in Tocco Caudio old centre permits to reactivate an architectural abandoned heritage and to diversify the touristic demand. The theoric model for the definition of an AD considers (Dall'Ara, 2010): unitary management; hotel services; residential units deployed in preexisting separated buildings; common spaces; maximum two hundred metres of distance between buildings; presence of a lively coomunity; authentic context; management style integrated in territory and local culture. The AD is a horizontal hotel proposal, perfectly integrated in its territorial context, its culture and community, that becomes basic component of accommodating services offer. Realization of an AD is strictly linked to a small physical dimension, to authenticity and simplicity of traditional architecture lose in surrounding landscape, able to generate conviviality and friendliness, typical of Italian life-style appreciated by foreign market. The project considers the realization of: 1.598 mq of interventions on built context; 498 mq of parking; 3.679 mq of paved road and squares; 4.314 mq of green spaces (Fig. 8). To realize 10.089 mq intervention are estimated: 1.778.242,00 euros for construction; 453.492,00 euros/year for management; 687.485,00 euros of net revenues. The cost-revenue balance of Financial Analysis confirms the investment validity, obtaining a Net Present Value (NPV) of 401.316,81 euros and an Internal Rate of Return (IRR) of 9%.

6. Discussion and conclusions

Realizing an AD in Tocco Caudio old centre permits to reactivate an architectural abandoned heritage and to diversify the local opportunities. This hypothesis responds to requests of a new slow tourism, focused on culture and knowledge. The slogan *going local* synthesizes need of a strongest link with local culture, and the main actor of this new type of tourism is the *permeable* tourist. Researches made by ISNART (Istituto Nazionale Ricerche Turistiche (Cocco and Di Raco, 2013) demonstrate that Italy is the best place to find identity, authenticity, traditions. High quality tourism seems to be one of the most suitable tool to restart economic process of an inner marginal areas like the Valle Vitulanese, to empower and preserve places cultural identity, to identify strategic functions specific for every municipality and to activate an efficient network, able to link recycling and development by safeguard, accessibility and promotion of local material and immaterial resources.
The winning coalition among stakeholders groups shows a ranking of municipalities that reflects how CLS are expression of tangible and intangible services, in a complex and dynamic relation. Within an integrated perspective, adaptive evaluation underpins dialogue between knowledge and values, translating such dialogue into the selection of strategic goals and actions; it enables the identification of key values and related meanings, the exploration of opportunity and the creation of alternatives.

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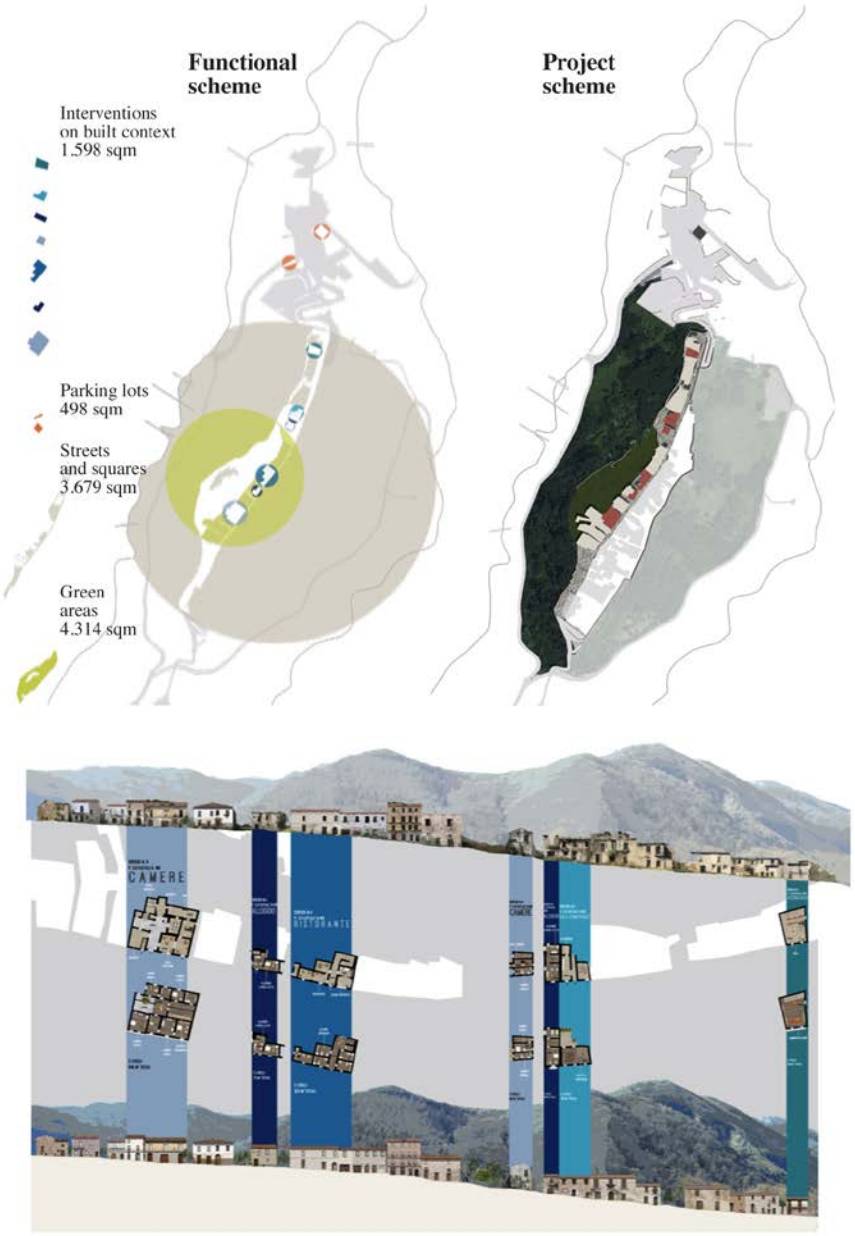
Fig. 8 – The project scheme for Tocco Caudio



For the Valle Vitulanese a situated strategy has been elaborated that leverages the specificity of each municipality to enable local networks, creating an incremental dialogue between reuse and development of tangible and intangible resources, where the network

model is a great opportunity in which to invest, and the quality tourism appears as the ideal instrument for the revival of this inner marginal area. The new generation of tourists requires authentic experiences. The search for authenticity is a reaction to the feeling of alienation of contemporary society. This trend is also expressed in the choice of non-traditional accommodation, with a marked preference for forms of sustainable, ecological, original, native and diffused hospitality. Therefore the strategy of enhancing the valley Vitulanese has the main objective of preserving and strengthening the cultural identity of places. The identification of strategic functions and specifications for each village aims to enable an efficient network that links recovery and development through preservation and promotion of tangible and intangible values of the Valle Vitulanese. In a broader perspective (considering social, economic and institutional objectives and constraints), a feasible policy options can be recommended. The methodological framework has proven useful in structuring and performing an adaptive decision-making process for land use policies, demonstrating that stakeholder-oriented multi-group analysis can adequately address a variety of sustainable development dilemmas in decision-making, especially when applied to complex project evaluations. Such evaluations are typically geared towards satisfying simultaneously private economic goals, broader social objectives and environmental targets. Many of these trials are linked with the theme of landscape services, where CLS could assume a driver role considering the high variety of categorization systems, assessment frameworks, indicators, quantification methods and spatial localization approaches but also the growing need of an integration of CLS into contemporary environmental management and decision-making processes oriented to local development.

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