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Green revitalization of historical settlements for responsible tourism in mediterranean areas: t*he multiscale approach of VIVIMED project and the experience of Albergo Diffuso*

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Abstract. Is it possible to apply a multiscale approach to implement a really green and sustainable revitalization of historical settlements? Is there a strategy to link the needs of social innovation and responsible touristic use of inner territories? How can we support territories that require strategies for intervention and tourism development capable of enhancing the geographical characteristics of places, environmental factors and understanding of economic and social values? This paper presents the experience of ViViMed international research project to implement sustainable tourism activities in Tuscany Region as driver of new opportunity to develop a new story-telling of the hinterland territories, stimulating the networking of natural, architectural and cultural resources to build a successful tourist experience for new scenarios of green and social innovation. The experience of *Albergo Diffuso* was implemented in two inner villages, Guinadi and Seggiano, stimulating a deep involvement of local communities to define different scenarios of services and network, testing new and traditional bioclimatic technologies for green rehabilitation.

1. The Mediterranean as sea between the lands: identity and contamination

The strategic geographical position of the Mediterranean and its climatic and cultural characteristics constitute its uniqueness, so much so that we can speak of "*Mediterranean Model*". But in this scenario characterized by swirling socio-cultural change what is the role played by the "*Mediterranean Model*"? How can we act on the different assets that characterised the historical inner towns: people, living, economy, governance, mobility and environment?

A true connective tissue, a privileged place of encounter between Europe, Africa and Asia, the Mediterranean has brought different peoples and civilizations into contact, marking its evolution through the centuries. Fernand Braudel, who dedicated the most intense and original works to this sea, he believes that the peculiarity of the Mediterranean lies not only in the mildness of the climate or in the beauty of the vegetation, but in the fact of being a real "sea between the lands" [1] through which different traditions, religions and cultures can interact and be enriched by mutual comparison.

It has always been a border in the most positive meaning of the term, a boundary projected towards the other where purity is lost in favor of continuous contamination. No empire, not even the Roman one, has ever managed to dominate this sea permanently, and no cultural hegemony has ever characterized its history. Also the typological characters and the architectural innovations of the Greek and Latin tradition, mistakenly considered by many to be the main and almost exclusive Mediterranean cultural source, has instead fruitfully intertwined with both the Jewish and the Arab and Islamic ones, generating common

historical and cultural roots, that allow to treat the Mediterranean with a global and unitary perspective that includes all its components and their being so closely interconnected [2]

It becomes interesting to understand today, in such a changing socio-cultural scenario, what is the role played by the "*Mediterranean Model*" in the current transformation process of historical settlements, what are the elements of connection and cultural contamination of a new "*Mediterranean thinking*", capable of creating value and suggesting a vision to consciously live the city, inner towns and inhabit the anthropized environment.

A century ago, worldwide, only one person out of seven lived in the city. Today, half of the world's population lives in urban centers, and this percentage continues to grow year after year. The constant increase of people represents a strong anthropic pressure that influences not only the shape and morphology of the cities, but the integration of advanced technologies, the competitiveness of companies, the innovative approach of landscape and cultural heritage management, the use and consumption of resources, the quality of life.

The UN estimates that in 2050 70% of the world population will live in urban areas, with deep negative impacts on the surrounding environment and on agricultural areas. In this scenario, a change in user profiles and a renewal of the reference needs frameworks are envisaged. We need to envisage new models of sustainable use of the living spaces of the fragile ecosystems of coastal zone and countryside, as well as historic villages of the inner areas in which there is a state of depopulation and abandonment, as contexts of application of new development strategies and technological innovations, in order to support the new social and cultural needs and to stimulate competitiveness in the real estate and building market, and above all, to orient the architectural design and planning solutions towards green rehabilitation actions for sustainable and responsible tourism (Figure 1).

Figure 1. Artistic view of typical small village in inner Mediterranean areas (Tuscany)

2. The *sense of place* as immaterial resource for responsive tourism

The places we consider has to be intended as the built environment, including ancient towns, old settlements, cultural landscapes, monuments, traditional buildings, and settlements. In general we include in the built environment all the artifacts having notable historical, urban, architectural, social and aesthetic

characteristics and significance: all places that fuse intangible assets, ideas, practices, and values that create a group's cultural identity (identity: "the perceived uniqueness of a place", "the sense of place") [3] [4]. Considering human settlements as entopias, each context has a particular physiognomy that is connected to its unique entity, as it's expressed through the tangible and intangible landscapes and the perceptual image created by the senses of vision, hearing, touch, smell, and taste.

Furthermore, the Granada convention made an important distinction in regard to the expression "architectural heritage" that shall be considered to comprise three permanent properties: monuments, groups of buildings, and sites. Sites are considered to be the combined works of man and nature, being areas which are partially built upon and sufficiently distinctive and homogeneous to be topographically definable and are of conspicuous historical, archaeological, artistic, scientific, social or technical interest". Therefore, for the first time, protection of architectural heritage overcomes the boundaries of buildings and incorporates intangible elements that, together with the shells (buildings), comprise the concept of site-topos and, by extension, the concept of entopia.

The cultural capitals (as non-renewable resources) represent an exception and the critical problem's focus of this proposal is aimed at the public and scientific debate, with a focusing on the need to enrich the meaning of resilience beyond the material capacity of the cities and buildings to react to disasters. Recently it has emerged the same priority to implement the meaning of the resilience including a holistic approach to immaterial issues, knitting together people-centered and place-based approaches into integrated vision that share a common cultural thread. To promote the balanced life of the cities, ensure both environmental and social sustainability of built contexts, implement the regeneration of small towns and buildings, and enhancement of immaterial resilience are the main drivers for adopting holistic approaches [5].

The Mediterranean hinterland has as common thread the low competitiveness of the commercial sector and the lack of inter-connections (the strong connotation of territorial "islands" predominates with respect to the potential of being an archipelago). The territories of the hinterland need to:

- increase the awareness of the territorial potential and skills of SMEs in the sector;
- diversify into the types of services and products to offer;
- specialize towards innovative, attractive and tailor-made activities and infrastructures for end users, both in terms of services and eco-friendly reception facilities;
- enhance in terms of the green-circular economy of the resources present in the territory, through the enhancement of the authenticity of the historical cultural heritage, the protection, management and sustainable accessibility to environmental resources.

3. The sustainable tourism as driver for new scenarios of green and social innovation

Through the years, a lot of small inner towns, especially in Italy and south Mediterranean countries, had suffered heavy phenomena of exodus in order to supply the lack of development opportunities and possibilities. This had caused a deep demographic impoverishment, with serious negative consequences on the public building heritage and economic-cultural activities of historical settlements. This depletion, together with the inadequate of skills and services management, contributes to reduce further the touristic "attractiveness" of these areas, that instead have great potentialities thanks to their "uniqueness", belonging to the extremely beautiful surrounding landscape and the artistic and cultural value of their small villages.

Despite the serious problems described above, recently it has been assisted to a general tendency to the growing of touristic request in the inner Mediterranean areas, as well as a crescent research of high quality services (especially for the quality of life and wellness during the travel). These aspects have led to a major awareness of what the traveler wants to find in the place that has chosen, making the vacation a real "experience" based on particularity. Nowadays people (thanks the opportunity given by internet and media) can be aware also of the importance of ecosystems preservation, natural and cultural resources and of the possibility of having a real 360 ° involvement (Figure 2).

Figure 2. The diagram shows the main drivers of territorial innovation and key relation of green infrastructures with governance strategies and rehabilitation building solutions. The implementation of responsible tourism needs deep interaction with green production activities and the development of research and innovation and new systems of environmental production.

4. The identity of local and vernacular architecture

The key action for the renovation of the small realities in the inner villages of Mediterranean areas, as a consequence the revitalization of small village buildings countries, has to be found in the solutions given by the vernacular and green architecture, that is the real way to find sustainable and responsible answers to the abandonment and death of these places.

Together with the implementation of local activities and the encouragement of new way for the revitalization of small realities, there is the necessity of individuate and develop new scenarios of innovation to support communities in inner settlements and to promote the competitiveness of small and medium companies; the vocation on territorial innovation raises through material and immaterial interconnectivity, linking together socio -economic development implication and local attractiveness. There is also the necessity of aim to the accessibility and safety, using environmental and ecological aspects as leverage, to reach a complete integration between places and infrastructures, in a developing model in which the man (communities) can be less "costumer" and more "user". This model has to be the more interactive and integrated as possible, in order to individuate new viewpoints of operability in a well-rounded perspective.

In this sense the importance of local architecture is well seen; in a world of hyper technological solutions for every aspect of life, there's the need of coming back to simplicity. As well-known at all levels, the architecture of the past in every single part of the earth teaches us optimal solution for the local problem solving. In every specific context at every requirement corresponds a real approach that leads to a particular solution. Also, in the name itself "vernacular" (from the Latin "*Vernaculus*" which means domestic, familiar), term coined for the first time in 1964 by Bernard Rudofsky in his "Architecture without architects" [6] is clearly evident the message of this type of method: all the problems regarding the primary necessity of most communities (first of all the need of repairing from weathering, feeding, sleeping, living together) is strictly related to the place where it grows. It can be seen as an answer to all the social and environmental requests. In this sense we need to be aware of a simple but not trivial assumption: the vernacular architecture, just because of its adaptive character, deeply linked to the construction (in its most imminent meaning), possesses a strictly fragile character but not in the weak sense (as the term might suggest) but rather resilient, adaptive, sensitive to change. It corresponds to a vision of the world (proper to every human group), declined according to particular needs. These characteristics suggest an idea of

architecture, (understood as technique, constructive wisdom) absolutely strong and capable of giving a strong message of identity. In contrast to the standardizing tendency of the modern vision of the world (the great metropolises are an example) we try to give new life to an idea of individuality based on the enhancement of uniqueness; uniqueness of the small realities of which the Mediterranean area is full, which, however, are likely to remain crushed forever. In this sense, this idea can be extended to all fields of knowledge, in order to create a model (continuously evolving precisely because of its empirical character) economically and socially sustainable in order to revitalize the most depressed areas of the hinterland. This model can trigger virtuous processes that could be repeated in subsequent experiences, so as to create a real network between the various realities, focusing attention on the theme of tourist enjoyment.

5. The sustainable tourism and the research of authentic experience

The territory is not a tourist product: we need the service that makes it product (*green product*) for our experience Experiential tourism, as a tailored version of sustainable tourism, represents a new opportunity to develop a stoytelling of the hinterland territories, stimulating the networking of natural, architectural and cultural resources to build a successful tourist experience. Sustainable tourism stimulates a new relationship with natural and cultural contexts, orienting not only tourists, but also local communities hosting new lifestyles aimed at protecting and preserving the socio-cultural authenticity of the landscape and the environment. These processes are able to configure a type of tourism that, in harmony with the territory, tries to solve the main problems related to tourist mobility, to the resilience of antropic pressure and of load capacity of the territory (land use, landscape degradation, biodiversity and the same tourism activities), energy consumption, water consumption, waste management, social, cultural and economic development. [5]

As Joseph Ejarque (Ftourism & Marketing Agency) explains well during the ViviMed event, the key to success is to understand the tourist's perspective! For example, we think it is a winning solution to propose the territory through its symbolic images, its beauty. The Tourist, on the contrary, he is looking for the best experience of that territory, in order to discover and experiment its "know-how": he is looking for activities to dive deep into the place. It is therefore necessary to know how to pay proper attention to the market, its structure, emerging concepts and products.

The idea of sustainability leads back to the demand for Slow Tourism or active tourism; the idea of ecotourism is linked to outdoor and nature tourism; gastronomy to food and wine tourism. Putting the right attention to the wishes of tourists means, therefore, knowing how to enhance the beauty and uniqueness of the area that the destination can offer ("password" TO SEE), support the motivation ("password" TO DO), to guarantee a unique and memorable experience (password TO LIVE) (Figure 3) (Figure 4).
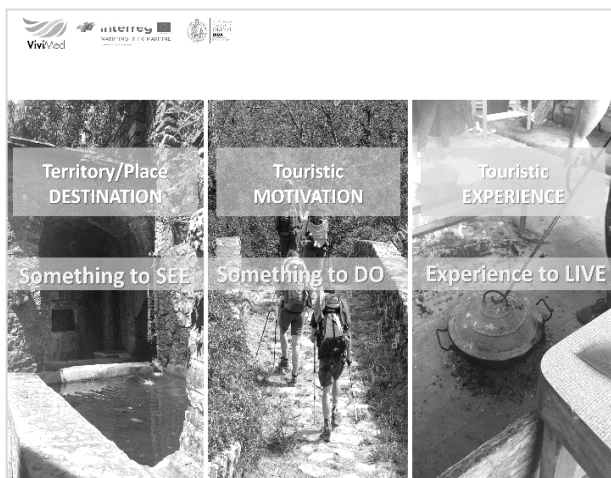

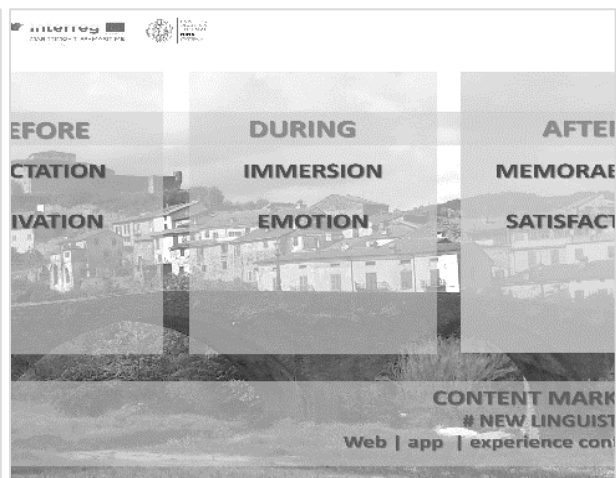**Figure 3.** ViViMed Living Lab training material.   **Figure 4.** ViViMed Living Lab training material

If we analyse the current tourism demand we realize that there is a rapid and dynamic change in needs and a consequent change in the choice of destinations, looking for new experiences in the place: active holidays instead of slow holidays; authenticity instead of fake environments; dive in authentic places, intact, clean, where culture and environment is really unique and protected. If a community aims to develop the slow tourism on its territory, the effort as to be oriented to improve the following aspects (Figure 5) (Figure 6) :

- *Authenticity*: offering true and genuine experiences, far from mass routes, in contact with the local community
- *Sensoriality*: making the destination live with the 5 senses
- *Immersivity*: making the tourist merge with the place, the identity and the local culture
- *Tourists as part of the local communities*, getting in touch with the population, its identity and authenticity.

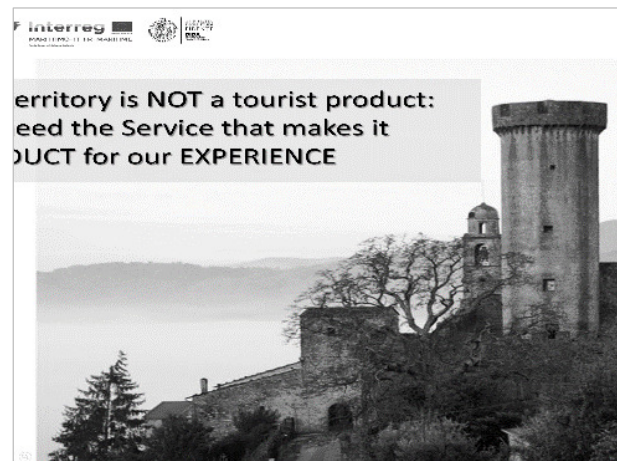**Figure 5.** ViViMed example of story-telling.

Figure 6. ViViMed Living Lab coaching material.

The product must therefore be relevant and able to respond to these needs: creating authentic experiences, thematic holidays, able to "customised" if necessary and in line with new technological tools. The tourist experience becomes the right combination of physical assets and services developed in the area, stimulating the personal and emotional interaction of the tourist. Personal experiences will involve the emotional aspect of the tourist, at physical, intellectual or even spiritual level. To create this type of experience, it is very important to create a successful systemic and dynamic network, based on the plurality of services offered by single operators and tourist companies.

6. ViViMed New hypothesis of renovation processes for the inland areas of Mediterranean countries

Among the positive aspects that involves thinking about the territory as an environmental system capable of resilience, one of the main is the reference to an organic vision that allows integration, enhance and direct towards common objectives, solutions and interventions that, alone, risk to create discontinuity. In a dialogue with the different stakeholders, we share the idea of a "Eco sustainable territorial development model", aiming to combine architectural features solutions to new productive, tourist and commercial functions.

It will be important to identify the possible drivers of revitalization and imagine the profile of communities capable of triggering the proliferation of a network of social relations, (stimulating new economic connection with the local productive fabric) and at the end to redevelop its existing building heritage; these are to be considered the first steps to start a regeneration of the anthropic fabric and a sustainable use of the territory.

The ViviMed is transnational cooperation project financed by Interreg Programme It-Fr. The activities focus on the enhancement of common, tangible and intangible assets, both in this regard to their natural potential (sun, wind, sea, water, land, habitats, plants, animals, ecosystems and landscapes), both in terms of their cultural heritage, which over the centuries has strengthened their uniqueness and the territorial identity. This is the basis for the dissemination of a competitive model, for the development of a network of eco-green infrastructure and sustainable use. A model that can be exported to other contexts present in the Italian and Mediterranean hinterland, where naturalistic potentialities and resources linked to the authenticity of the places are dominant, but not adequately valued in the logic of a green-circular economy (and / or conscious tourism).

7. The multiscale methodology of ViviMed project

The research on the method can be focused on a strongly transversal sector: the tourism/fruition sector.
A mapping of the tourism SMEs of the chosen territories, with the profile of the activities and services, the typology of the receptive structures (farmhouses, B&Bs, widespread hotels in the historical villages) will be elaborated. Innovative scenarios will be developed for the integrated and multi-theme tourist offer, according to the specificity of the hinterland territories, also in collaboration with regional trade associations and agro-food and social cooperatives and their consortia, through:

- The enhancement of the territorial resources for the development of an integrated and multi-theme tourism offer, flexible in the themes and methods of development by type of user (e.g. single, families, old people);
- The configurability of the type of involvement with the desired territory: experiential, social, naturalistic / sporting, cultural, historical, artistic tourism;
- The promotion of innovative forms of hospitality such as the widespread hotel, network of bike hotels, hospitality in parks (e.g., zero-impact accommodation facilities) and pathways of ecological brands;
- The enhancement of educational aspects as promoters of the environmental theme;
- The rethinking of the seasonality of tourist packages to ensure affluence throughout the year (e.g. promotion of events related to agricultural activities, e.g. collection of grapes, olives, chestnuts by combining landscape / cultural routes);
- The activation of partnerships with marinas and terminals of sea ports, cruise activities and tourist villages along the coast through rural tourism packages / excursions;
- The promotion of a model of infrastructure recovery (road network, paths, integrated village / territory / landscape systems, historic buildings) and construction of green structures to support tourism".

Through a process of cross fertilization, it could be easier to reach a convergence of territorial development policies that increases the advantages of the alignment of the respective socio-economic systems. In this way, a virtuous process which will lead to the revitalization of the territory could be triggered on the other favors an improvement in the competitiveness levels of local SMEs operating in the green-circular economy chain, focusing above all on technological innovation, multicultural inclusion, the pursuit of quality of life and the application of the concept of *Design for all* (people with reduced mobility, children, old people) as the common thread of the new vision of territorial and business development.

To implement an efficient and operational governance mode where all the stakeholders of the territories in question are actively represented and involved, the project envisages a process of public-private participation articulated within Living Labs that play the role of territorial catalysts. The Living Labs will involve the four main actors: public administration, local businesses, scientific researchers and the inhabitants of the territory (Figure 7).

Figure 7. Coaching material supporting the activities of the Living Labs, stimulating the creation of multi-sector packages and the creation of networks for an integrated tourism offer.

8. The multilevel storytelling of the inner areas

The narrative dimension (multilevel) of the territory has to become the focus of the new forms of tourism development. Sustainability and eco-compatible innovation of tourism services has been a central and common element within the ViViMed project: the new tourism design must take into account the delicate aspect of mitigating the environmental impact created by the increase in tourism flows.The ViViMed project explored these potentialities of some internal Mediterranean areas that represent a cultural, environmental and "know-how" heritage, guardians of territorial and regional identities. A community wealth enriched by the natural capital, culture, local craftsmanship little known outside the local territory, often penalized by poor accessibility and lack of material and immaterial infrastructure. The combination of these dynamics, accompanied by socio-economic causes, highlights territories that require strategies for intervention and tourism development capable of enhancing the geographical characteristics of places, environmental factors and understanding of economic and social values.

Below is an example of some slides, collecting the data of 10 territories selected by ViViMed project, (in Tuscany Sardinia, Liguria, Corse and Paca) as a tool for mapping material and immaterial resources and to elaborate a multi-sector and multimedia framework [matrix of multilevel contents and storyboard for website].

Starting from the 10 points of territorial analysis, the criteria of data collection have been preliminarily structured, allowing to collect both data on natural and anthropic resources which characterize the identity and specificity of the territories, and data on activities carried out in the tourism sector and complementary. The idea was to identify the possible interconnections on services and products already present, creating

added value to the existing tourism offer. This research has contributed to the activities of the Living Labs, stimulating the creation of multi-sector packages and the creation of networks for an integrated tourism offer (Figure 8).

The slides also include descriptive elements (maps, images, texts, diagrams, etc.) that are the subject of possible web animations. The web pages will obviously be much more dynamic and can offer a high level of interaction with the user / visitor (Figure 9).
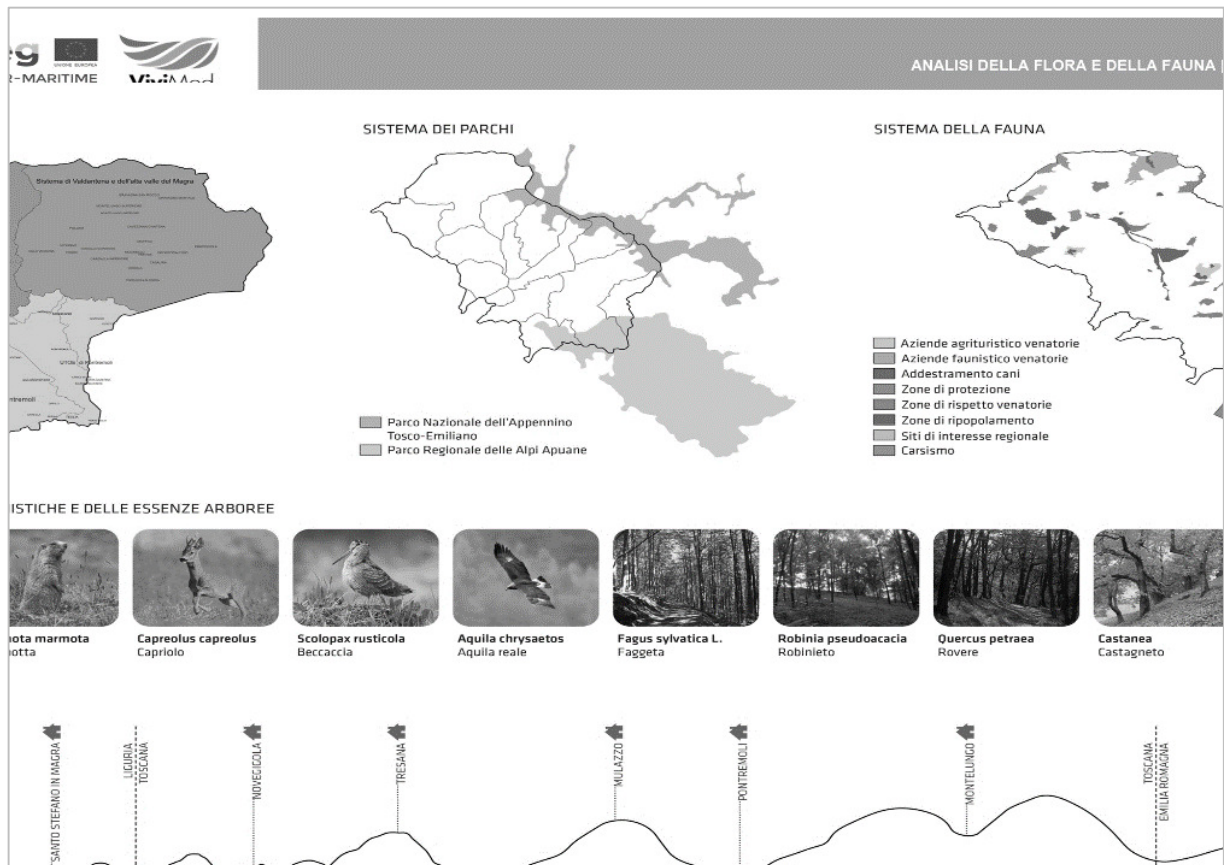

Figure 8. Example of the slides including the descriptive elements (maps, images, texts, diagrams, etc.) that are the subject of possible web animations.

Figure 9. Example of the web-page layout and storyboard including the descriptive elements (local cultural events and traditional activities with season distribution) that are the subject of possible web animations.

9. The experience of Albergo Diffuso (*scattered hotels*)

The *Albergo Diffuso* (AD) can be defined as a horizontal hotel, located in a village or in a historic centre, with rooms and services located in different buildings, very close to each other. The idea of scattered hotels got its start in the early 1980s. Giancarlo Dall'Ara (with a long experience as Hotel marketing consultant) got the inspiration for "*scattered hotels*" while trying to revive tourism in an earthquake-damaged corner of northeastern Italy in the 1970s. Dall'Ara is still involved in the alberghi diffusi movement as the president of the *National Association of Alberghi Diffusi* (ADI). This is the organization that certifies new scattered hotels, and the group's reach has spread beyond Italy (Figure 10).
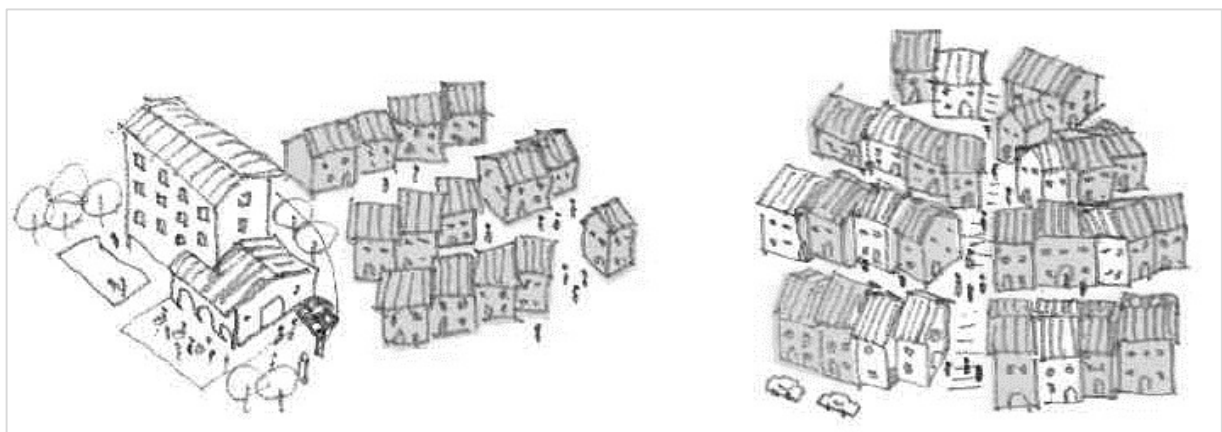

Figure 10. The logical diagram of *Albergo Diffuso* as horizontal hotel

Figure 11. Four Season Hotel in Bahrain as example of tower model.

Figure 12. Distribution of functions in a typical hotel building structure.

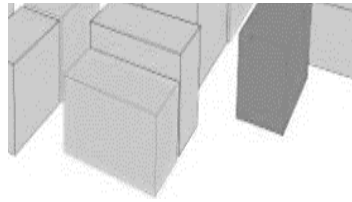**Figure 13.** AD Sextantio *Le grotte della civita,* Matera, Italy.

Figure 14. Large distribution of functions in the *Albergo Diffuso* model.

As described by ADI, the *Albergo Diffuso* is a unitary receptive structure, managed in an entrepreneurial way, which satisfies the need to stay in a prestigious, authentic urban context, in contact with the local community, taking advantage of the normal hotel services. This formula has proved particularly suitable for villages and towns characterized by historic centers with high artistic and architectural interest, which can redevelop and enhance old buildings closed and unused, solving the problems of tourist accommodation without new construction (Figure 11) (Figure 12).

The AD fully meets the needs of contemporary tourists and is in line with sustainable tourism based on rehabilitation, protection and enhancement of the territory, with attention to local traditions and authenticity. It is a good solution to the lack of accommodation in marginal areas throughout Italy, stimulating a new vitality into towns and villages that have been abandoned or are at risk of abandonment due to continuous depopulation.

The AD model - as a model of land development that does not create environmental impact - it is a more than a valid solution to improve the development of fragile and suffer areas, ensuring the protection and conservation of the heritage of environmental and cultural resources presented by the territory, connecting the enhancement of the territory and its protection, promoting economic and social growth and positively influencing the whole surrounding area. In order to create a *Albergo Diffuso*, it is not necessary to build anything, since it is limited to   recovering/restructuring and networking what already exists. In addition, an AD acts as a "social protection" and animates the historic centres, stimulating initiatives and involving local producers considered to be a key component of the offer. In fact, thanks to the authenticity of the proposal, the proximity of the structures that compose it, and the presence of a community of residents, an AD is able to propose more than a stay, a lifestyle. Precisely for this reason, an AD cannot be born in abandoned villages (Figure 13) (Figure 14).

10. Two proposals of Albergo Diffuso: Guinadi and Seggiano

During the ViViMed Project two pilot projects have been developed in Tuscany Region, one in the inner town of Guinadi (Lunigiana) and the second one in Seggiano (Amiata). The two villages have similar elements and the AD experience can be replicated in other contexts: they are villages in the hinterland of Tuscany, with a strong architectural identity, numerous environmental resources, which despite their beauty, remain unknown. The objective of the pilot project was the rehabilitation of the existing building heritage, with the intention of restoring the life of the village and its historic center, thus assuming a project of *Albergo Diffuso* involving not only the buildings, but also some spaces that over time have lost their identity (Figure 15) (Figure 16).

Figure 15. General view of Guinadi village and schematic environmental section with resources.
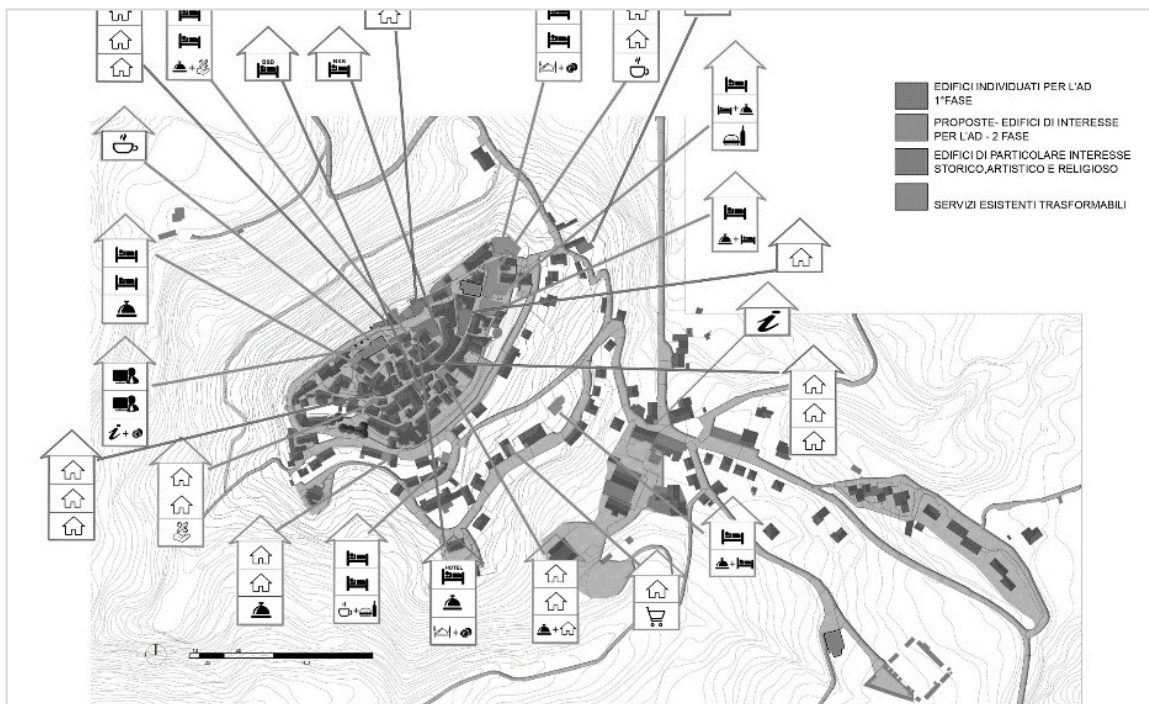

Figure 16. Master Plan of Seggiano village and first scenario of accommodation distribution.

The particular typological choice of the Albergo Diffuso has been decided according to some factors: both in the village of Seggiano and Guinadi, there is an active community; small activities for the reception have already been started; a museum itinerary on the history of the oil of Seggiano is already active: there is a slow food brand on the testaroli (typical pasta) of Guinadi. The realization of the AD in the village, puts in network existing buildings to be renovated, so as to realize a receptive "horizontal" structure instead of a "vertical". It is, therefore, a project that is interested in local communities, environmental sustainability and the revitalization of productive and commercial activities, not adding anything artificial, but enhancing, even through small interventions, what already exists (Figure 17).
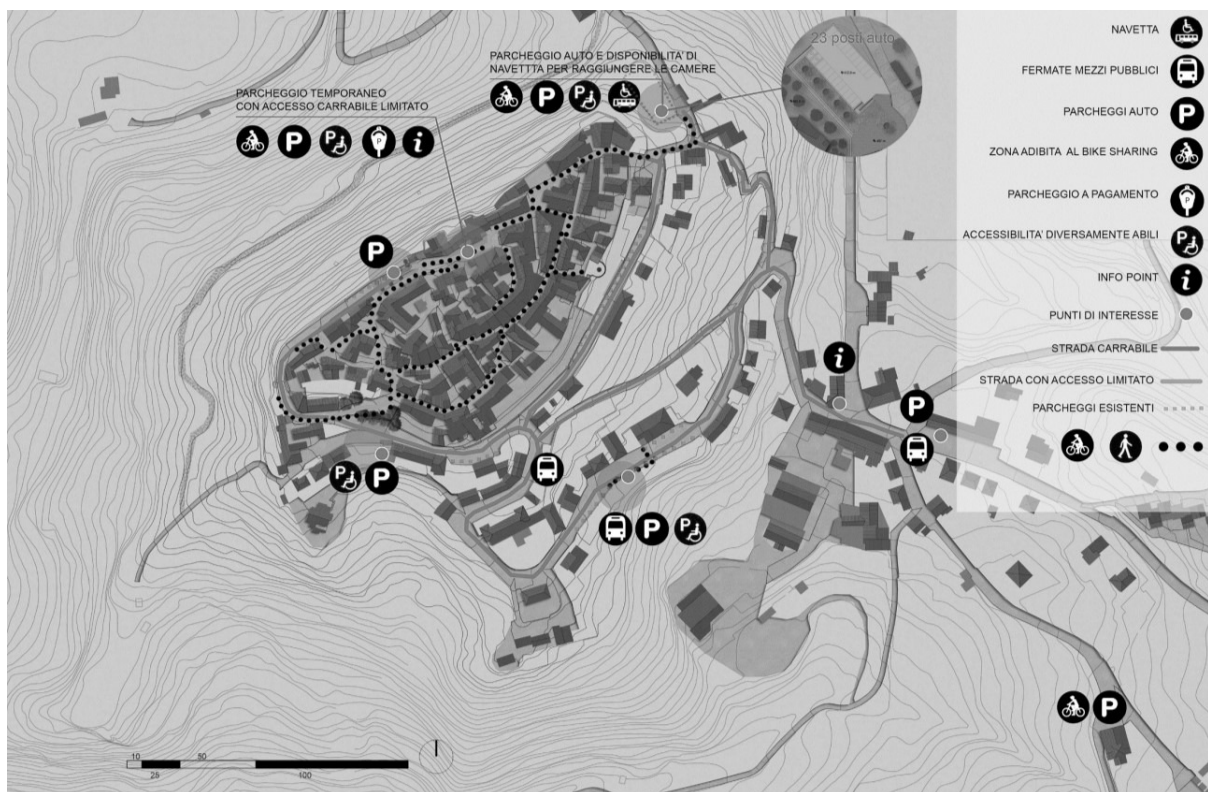

Figure 17. Mobility Master Plan, oriented to allow accessibility for all.

11. New and traditional bioclimatic technologies for green rehabilitation

According to the holistic approach of architectural design, the project aims to integrate different competencies, technologies and materials, to meet project requirements with a sustainable strategy. In this new approach the value and the lesson from Vernacular Architecture are evaluated as an important root to understand how to reach to climatic condition and how to use local materials (0km materials) to reduce non useful energy use. They are the set of strategies of design and construction, through which it seeks to achieve the realization of a sustainable architecture, an architecture that using its formal configuration, technologies, components, materials and equipment, try to establish an optimal relationship with the surrounding environment so as to reduce energy consumption and provide the best comfort to the occupants, using as far as possible natural systems and reducing the use of mechanical systems of the building. This design approach can applied in the transformation of the natural and built environment at different operational scales: from the size of regional and urban planning to town and district design, architectural concept, building detailed design, mechanical plant, up to the choice of building component and to sustainable building materials and even applied to rules setting and post realization management.

Definition of *bioclimatic technologies* can be misleading because it does not constitute an independent category of technologies applied to construction, but are the result of a more comprehensive, holistic approach that involves all issues related to sustainability, and in this meaning includes both the reduction of impacts on the environment, the amount of energy contained in the components (embodied energy), the evaluation of their active role in the life of the building, until the final disposal (life cycle analysis) (Figure 18).

However, there is a tendency to define "bioclimatic technologies" some applications where the aims to pursue bioclimatic architecture is more relevant, and these technologies are mainly related to the building envelope, such as ventilated roof or façade, winter garden, solar shading systems, light chimneys, ventilation towers, and so on, but the concept of *bioclimatic technology* must always be compared and validated by the analysis of its appropriateness with respect to the local context in which it is used, ie the climatic context and the specific environmental design intervention and not as a model or a fashion design [7]. For this reason, a bioclimatic technology that is properly applied in Berlin is certainly not very appropriate when applied in Dubai and vice versa. The choice of appropriate technology may rise from the needs of the specific building under the current climatic condition.

A possible articulation of bioclimatic technologies in line with the conditions of the environment, could be made in relation to the prevalent objectives to be achieved, with regards to the lesson learned from vernacular architecture. The traditional urban morphology typical of Italian rural villages, with narrow pedestrian passages and street between buildings, tend to reduce energy losses, to break the wind, to shadow in summer while promoting stronger proximity relation amongst inhabitants.

The architectural traditions of the past, rich of potentialities and very interesting cultural contaminations, represent an important heritage for the communities and they are the bases to take as inspiration for developing new building components with high energy performance. It's necessary to "refer to the ancients" to recover and reprocess the traditional constructive principles and to increase the level of environmental competitiveness, for the design of new constructions and redevelopment interventions.

The solutions linked to traditional housing models, gives rise to the aforementioned "vernacular architecture where the use of simple technologies linked to the constructive traditions (especially in Italy examples of this are quite frequent), passed down from generation to generation without solid scientific basis, is reinterpreted and repurposed to ensure high quality levels. These characteristics, common to many Mediterranean countries, both on the North industrialized coast and on the South and East coasts where agricultural activities are still prevalent, have not mapped into the design, construction and even use of materials in the contemporary architecture. In this context a main problem to be considered in order to cope with population growth and the consequent increase in the energy consumption, is to identify appropriate solutions able to satisfy all the new social needs and based on the use as much as possible of construction materials that reflect local traditions.

Within the framework of the European Nearly Zero Energy Building (NZEB) directive, the architects must be able to guarantee a suitable tradeoff between architectural quality of design solutions and technological innovation in the project, paying particular attention to the implications on the structure of the envelope and on the changes that new materials and new technologies induce the language of architecture. The architect's privileged point of view therefore becomes the "sustainable project" for environmental wellbeing, which aims at a bioclimatic approach focused on the control of green parameters, energy saving and the use of appropriate technologies and materials (Figure 19).
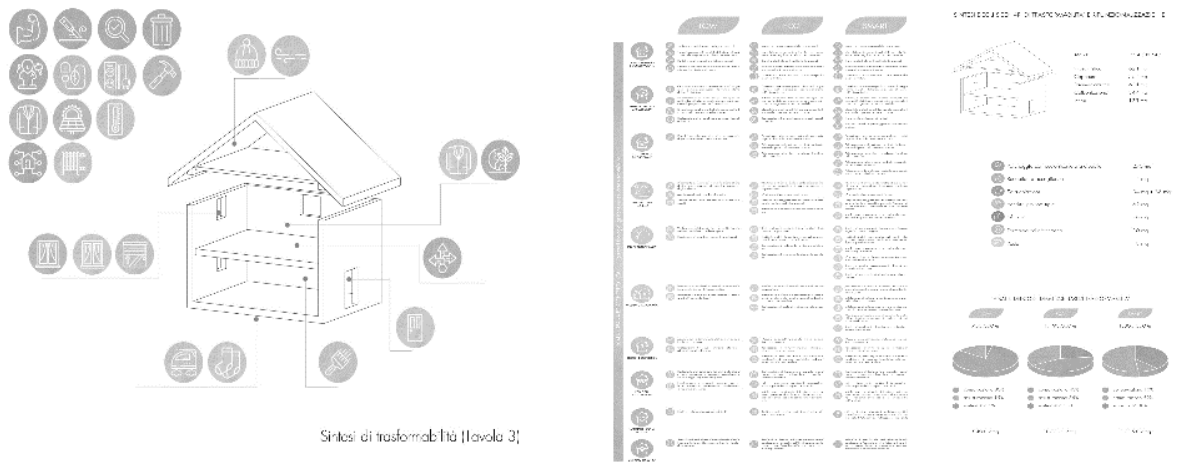
Figure 18. Three different scenarios of rehabilitation solutions and relative cost: low, eco, smart.
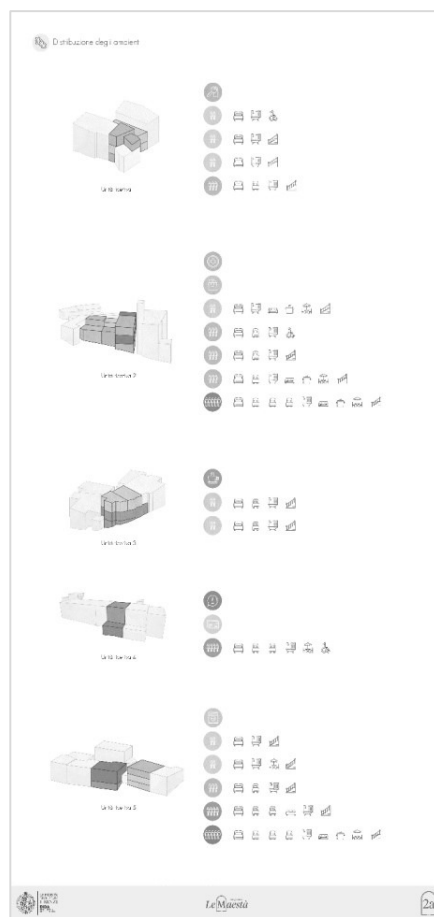

Figure 19. Analysis of the buildings selected for *Albergo Diffuso* in Guinadi village. Analysis of accommodation capacity and potential services to be developed.

12. The application of BIM for integrated design and AD maintenance management

To develop the *Albergo Diffuso* project, the BIM system was used, applying the methodology both on an urban scale and on a building scale, testing the pilot project for the renovation of a single-family house. The use of BIM software, Revit, is especially useful for providing a rapid response to informative data, to know and manage both the dimensional data and the materials and buildings performance. The building chosen as a "model" has typological and technological characteristics very similar to the buildings present at Seggiano village and becomes replicable in other contexts in which to develop the widespread hotel. Moreover, thanks to the BIM the feasibility project can be developed more easily, creating different scenarios with combinations of technological solutions, creating a cataloging of more interventions for different energy design scenarios. In the three-dimensional model the materials of the restructuring intervention have been inserted to improve the energy efficiency of the building (Figure 20) (Figure 21).
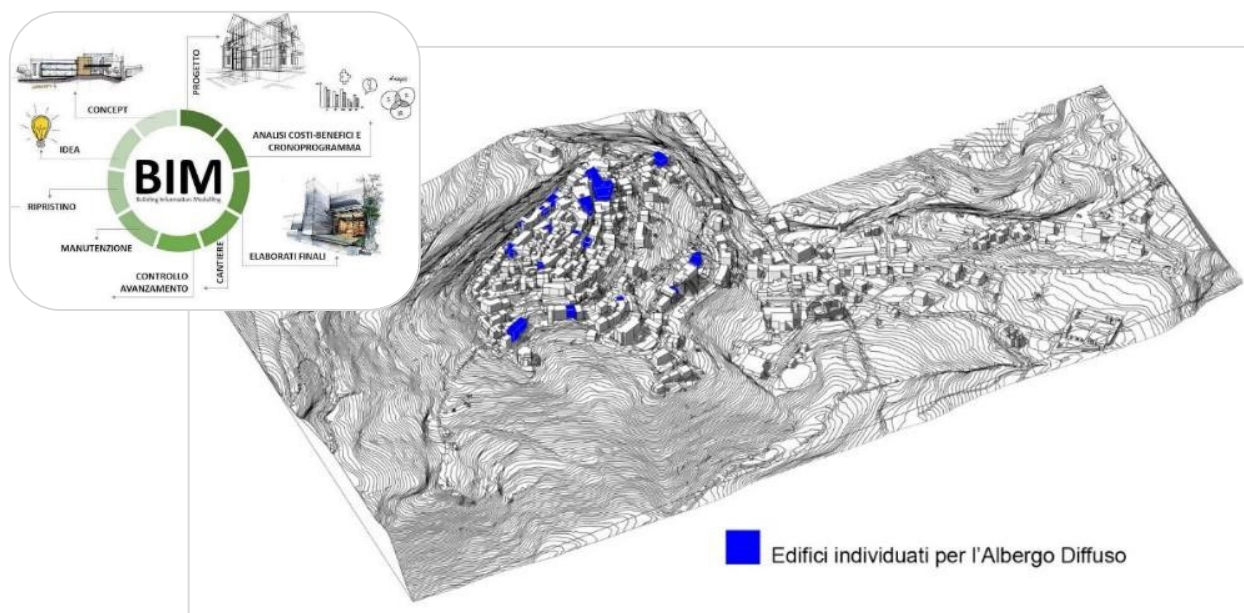

Figure 20. 3D map of Seggiano village realized using BIM Building Information Modeling methodology.
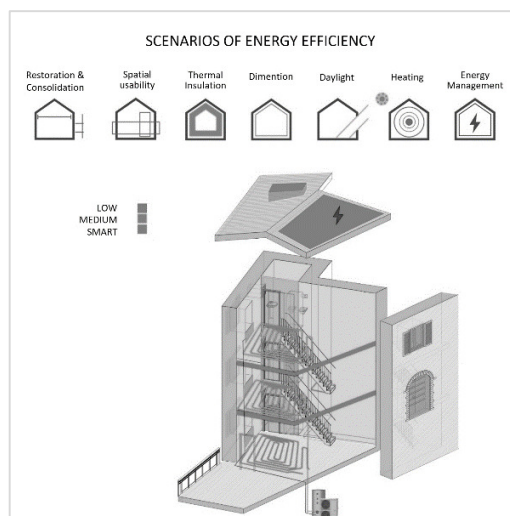

Figure 21. 3D modeling of energy efficiency scenario and technological solutions.

13. International assessment of environmental quality for sustainable tourism

During the VIVIMED research, the main systems of environmental quality assessment for the enhancement of historical villages in the inner areas and the current certification protocols of the Albergo Diffuso were examined, at national and international scale.

- *Legambiente turismo Natura Bellezza*
- *Borghi più belli d'Italia*
- *Bandiera arancione*
- *Ecolabel*
- *Tripadvisor Eco Leader*
- *Visit*

Figure 22. Different logo to evaluate and define the architectural and environmental quality of historical village.

The analysis becomes the useful support for the definition of the Guidelines for the valorisation of the settlements in the inland areas - *10 Points for the Albergo Diffuso* - as a lean and user friendly system of environmental qualification/evaluation of the historical building heritage of the inland territories (historical villages), able to trigger a process of valorisation both of the settlements and of the communities, combining principles of territorial and social innovation, in a perspective of short supply chain and green-circular economy (Figure 22).

The key element becomes the enhancement of the characteristics of the Mediterranean in the respect of the identity of the places, of the living tradition, of the technological knowledge, of the innovation, of the competitiveness to build in a sustainable way, in order to guarantee innovation and environmental quality of the building components as well as the quality of planning and construction process, retrofitting the existing building in the historical contexts [Historical Villages].

In order to strengthen the competitiveness and the communication of the quality of the *Albergo Diffuso* system, the ViViMed project has focused on the definition of a validating/assessing system. Starting from the experience acquired in the sector and recognised at national level, ViViMed has extended the procedures provided for at European level with additional items that can be assessed using LCA methodologies. Thus establishing a simple but at the same time specific verification methodology in the Mediterranean area, to which to submit products and/or processes, projects and operators that, according to the ViViMed protocol, voluntarily accept the brand; a symbol of enhancement of the sustainable and responsible tourist system, useful to implement the marketing strategies, communicating the energy-efficient and environmentally competitive buildings, structures and services. A multilevel evaluation system has been proposed to allow us to identify elements of reward that can be linked to a Plan of Incentives to support the implementation of actions of territorial revitalization and enhancement of settlements in inland areas.

14. VIVIMED ten evaluation criteria of environmental, architectonical, social and cultural quality

Within the ViViMed project one of the main objectives is to define a lean and "user friendly" system of environmental qualification of the *Albergo Diffuso*, as a tool of great potential, capable of triggering in the

territory a process of enhancement of both settlements and communities, combining the principles of territorial innovation and social innovation, with a view to a short and green-circular economy chain.

The idea is to propose a qualification system based on the 10 Points for the *Albergo Diffuso*, both as Guidelines for the development of settlements in the inland areas, and as a communication tool for a sustainable and responsible approach for a tourist use of the territories, declined in the aspects of environmental, economic, social and cultural quality. The ViViMed model aims in particular at enriching and integrating the minimum requirements of the *Albergo Diffuso* regulation not only with criteria of environmental, architectural and social quality, but with indicators of territorial enhancement that stimulate the networking of material and immaterial resources characterising the territory (Figure 23).
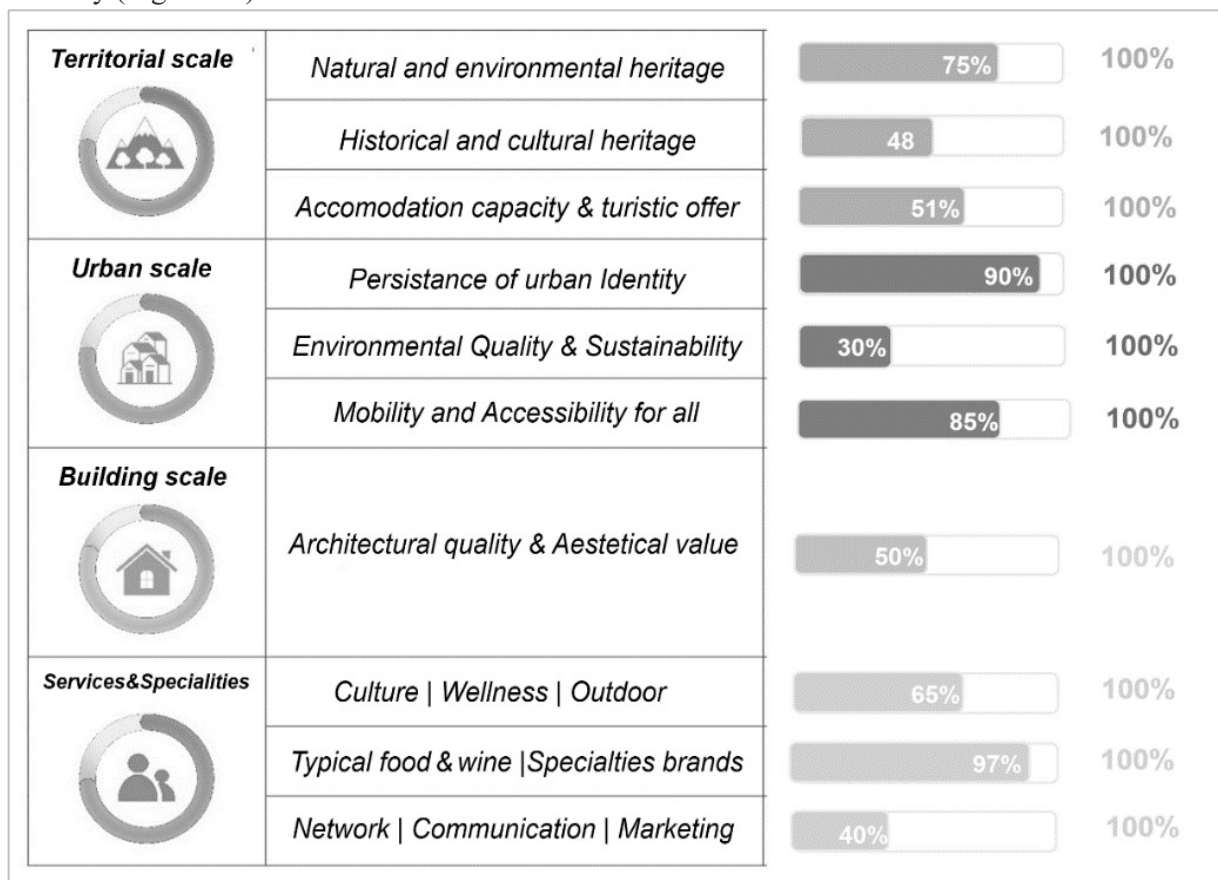

Figure 23. Selected indicators to define 10 points of *Albergo Diffuso*. Example of application with score.

The 10 points proposed by ViViMed for a more sustainable *Albergo Diffuso* model are applied to the different scales:

- *Territorial scale*, enhancing the natural, historical and cultural heritage and the potential of networking accommodation capacity.
- *Urban scale* (historical villages), focusing on the persistence and homogeneity of the urban microsystem, its morphological characteristics and architectural quality, environmental and social sustainability, the management of accessibility for all, of soft mobility, the conscious management of natural resources (green water, soil, energy) and anthropogenic resources.
- *Building scale*: enhancing the persistence of a homogeneity of the historical buildings typologies, the morphological characteristics, the construction technologies, the use of local materials and solutions of vernacular architecture for energy efficiency.

- *A cross-cutting scale* of intangible resources, services and networks, giving added value to an integrated system of services and experiences already operating in the territory, aiming at the protection and promotion of brands, traditional products already identified, or promotion, communication and marketing networks already in use.

The graphic model proposed for the representation and visualization of the 10 points for the *Albergo Diffuso*, also allows to identify the gap in the different contexts, highlighting the fields and the areas for improvement to achieve a better positioning. Knowing the areas for improvement, common to many of the structures analysed, it is possible to suggest which is the best governance strategy capable of stimulating an effective model of ecotourism in the internal Mediterranean area and which targeted actions the PA can and must undertake to stimulate the growth of competitiveness of historical villages and the correct enhancement of the territorial eco-system.

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