

# Ranking Apulian Ecomuseums using Qualitative Indicators of Social, Economic and Environmental Sustainability

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## ABSTRACT

Ecomuseums promote responsible tourism practices and foster sustainable development for the community and the territory. In this context, the present paper assesses the influence of the fifteen officially recognized ecomuseums in the Apulia region (southern Italy), on the socioeconomic development of its territory. For this purpose, a specific survey was carried out focusing on the 3 components of sustainability: social, economic, and environmental. The results showed that Apulian ecomuseums seemed to be particularly active in the social component, and the *Porto Museo di Tricase* would be categorized as a reference in ecomuseology. Furthermore, the findings identified (i) the development of a digital strategy for the ecomuseums, mainly involving their digital channels, (ii) the importance of strategic governance built on sustainable relations with local authorities, and (iii) the strengthening of the local network, as the actions on which to focus the efforts of private and public decision-makers in order to better enhance the performance of the ecomuseums examined.

**Keywords:** sustainable development, impact assessment, cultural heritage, regional development.

## INTRODUCTION

As heritage preservation and sustainable development continue to be on top of both academic and policy agendas, a comprehensive analysis on the sustainable performances of Apulian ecomuseums, holds the promise of shedding light on effective strategies that can be applied to similar contexts worldwide. By engaging residents, local organizations, and stakeholders, ecomuseums empower communities to take ownership of their heritage, fostering a sense of pride and responsibility. This community engagement builds social cohesion, encourages civic participation, and supports sustainable development practices that are inclusive and representative of local needs and aspirations. In the Apulia region, ecomuseology has found fertile ground thanks to the richness of historical, cultural, and natural resources present in its territory. In this regard, fifteen ecomuseums have been officially recognised by the Apulia region government in accordance with regional law No. 15/2011. The integration of ecomuseums into Apulia's development narrative introduces a dynamic approach to heritage management, one that transcends conventional museum concepts by engaging communities, promoting sustainable tourism, and stimulating local economies.

### 1.1. Ecomuseum Definition and Approach

The term “ecomuseum” was used for the first time in 1971 at the 9th International Conference of ICOM (International Council of Museums) by the French Minister of the Environment, who read a document prepared by George-Henri Rivière and Hugues de Varine, considered the fathers of the ecomuseum concept. As highlighted in Table 1, while a traditional museum displays a collection, an ecomuseum showcases heritage. While a museum is confined within a defined space and delimited by walls or other structures, an ecomuseum encompasses whatever lies within a territory (a space without precise but defined boundaries). Whereas a museum is built for one or more people (the public), an ecomuseum is born for a population (De Varine, 2021).

**Table 1** - Difference between Ecomuseum and Museum

<b>Ecomuseum</b>	<b>Museum</b>
Heritage	Collection
Community	Public
Territory	Building/structure

Source: De Varine, 2021

The first experiences are recorded in France (in 1974, in *Le Creusot Montceau*), where it is thought that an ecomuseum can have two possible "paths" (De Varine, 2021): the first one is linked to community development and focused on enhancing social development, emphasizing the connection between the community and the territory. The second path is environmental and connected to the enhancement of the environment, aiming to preserve it even through direct action. Upon closer inspection, the two "paths" are not contradictory: community development involves the protection of the environment that hosts that society/community. According to what is stated in the 1st Article of the International Charter of Ecomuseums (read for the first time by the French Ministry of Culture and Education, March 4, 1981), the ecomuseum is a cultural institution that permanently ensures, in a specific territory and with the participation of the population, the functions of research, conservation, and enhancement of a set of natural and cultural assets, representative of an environment and ways of life that have succeeded there. It becomes, in short, the 'tool' to develop participatory processes for the protection and enhancement of local heritage (Angelini, Baldin, Baratti, Creaco, De Varine, Garlandini, Jallà, Reina, & Ruggero, 2014).

The (local) community managed an innovative model of an open-air museum that connects the environment, the territory, and the heritage that resides in the memory of those who live it. Through this relationship, a community—where the key players are not only institutions given their crucial driving role but also involve a broader engagement of citizens and local society—commits to taking care of a territory. This is understood not only in a physical sense but also as the history of the population living there and the material and immaterial signs left by those who inhabited it in the past (Maggi, 2002). In 2016, Italian ecomuseums shared a strategic manifesto aimed at contributing to the creation, development, and evolution of ecomuseum experiences capable of generating virtuous models of sustainable local development. According to this document, the main goal of ecomuseums is to foster a sense of place-based identity, to encourage active participation from residents and to promote sustainable development, balancing economic development, environmental protection, and social well-being (Dal Santo, Baldi, Del Duca & Rossi, 2016).

### 1.2. Ecomuseums in the Apulia Region

Although in Italy there is no specific legislation for ecomuseums, the movement has spread to such an extent that today Italy boasts more than 250 ecomuseums (135 ecomuseums are recognized according to regional laws, 128 are not officially recognised) (Del Santo, 2022). The existing regulations governing ecomuseums are delegated to the Regions or, in a few cases, to the provinces. The first region to adopt regulatory measures in this regard (Regional Law 31/95) was Piedmont, followed by the Autonomous Province of Trento (Provincial Law 13/2000), and then, in chronological order based on the enactment of the law establishing ecomuseums, by the other eleven regions, namely Friuli-Venezia Giulia, Sardegna, Lombardy, Umbria, Molise, Tuscany, Apulia, Veneto, Calabria, Sicily, and finally, Basilicata with Regional Law No. 86 of November 18, 2018 (Ivona, Privitera & Rinella, 2021).

When it comes to ecomuseums in Apulia region, a fundamental role has been played by the experimental research project SESA (Ecomuseum System of Salento), conducted by a network of experts led by the architect and archaeologist Francesco Baratti, in collaboration with the Department of Cultural Heritage of the University of Salento, the Apulia Region administration, and local government. The experience of these pioneers was fundamental to include ecomuseums in the implementation process of the Region Landscape and Territorial Plan (PPTR, *Piano Paesaggistico Territoriale Regionale*), and subsequently in the issuance of the Regional Law on ecomuseums, dated July 6, 2011, No. 15, titled "*Establishment of ecomuseums in Puglia*". Few years later, the resolution of January 29, 2015, No. 48, of the Regional Council of Apulia, implementing the Regional Law 15/2011, represents, therefore, the initial founding moment of the Apulian ecomuseums since, on that occasion, the first nine were approved and officially recognized. Today, the region boasts a total of 15 officially recognized ecomuseums, becoming the first region of south Italy in terms of presence.

In recent years, Apulia region has experienced an exponential growth in the tourism sector that today represents 10% of the regional economy. Only in 2023 (January-August period), Apulia recorded a total of 3,330,500 arrivals (a 5.5% increase compared to the previous year) and 12,743,200 total overnight stays (+3% compared to the previous year) (data elaborated by Puglia Promozione). Ecomuseums can strategically align themselves to benefit from this surge. The symbiosis between the burgeoning tourist flow in Apulia and the unique offer of ecomuseums creates a mutually beneficial relationship. The influx of visitors provides ecomuseums with the opportunity to fulfil their educational and cultural missions while contributing to the economic vitality of the region. As cultural and heritage tourism continues to thrive, ecomuseums are well-

placed to play a pivotal role in shaping the narrative of Apulia's rich and diverse heritage. Table 2 shows how the tourist flow is distributed among the provinces of Apulia, and the related presence of ecomuseums for each of them.

**Table 2 - Tourism traffic in 2023 by provinces**

Province	Tourism traffic	N. of Ecomuseums
Lecce	932,000 arrivals - 4.1 million overnight stays	9 Ecomuseums
Bari	873,000 arrivals - 2.1 million overnight stays	2 Ecomuseums
Brindisi	420,000 arrivals - 1.6 million overnight stays	2 Ecomuseums
Foggia	715,000 arrivals - 3.5 million overnight stays	1 Ecomuseum
Taranto	223,000 arrivals - 920,000 overnight stays	1 Ecomuseum
BAT	122,000 arrivals - 280,000 overnight stays	\

Source: Tourism traffic data by *Ufficio Osservatorio di Puglia Promozione*

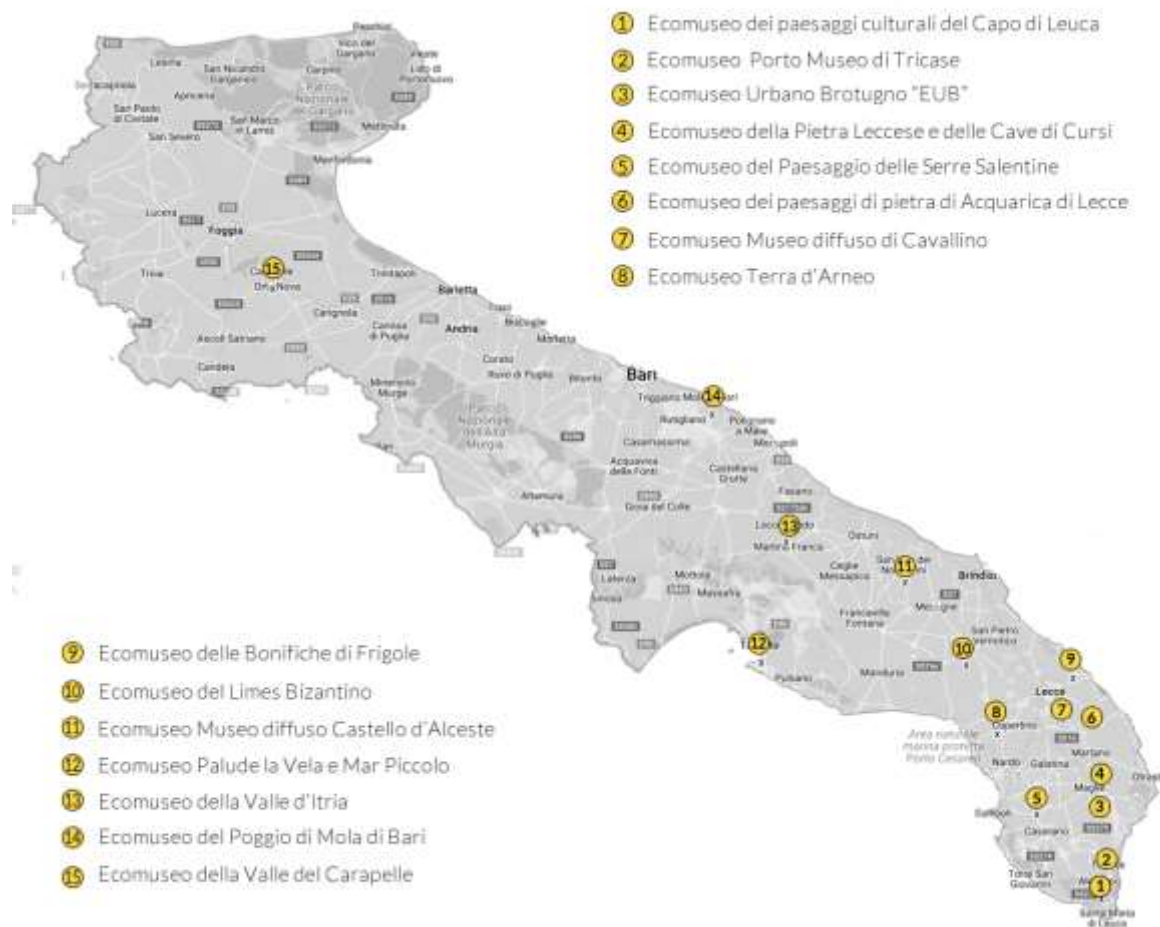
Table 3 briefly describes the fifteen ecomuseums and the heritage they are promoting and enhancing. Regarding the legal and organizational structure, 5 of the ecomuseums identify with the lead municipality, 1 ecomuseum has taken the legal form of a Foundation, 3 ecomuseums have been established as Associations for Social Promotion with public and private participation, and 6 are organized under other cultural associations or institutions (Pro Loco). After Table 3, Figure 1 shows the geographical distribution of the 15 ecomuseums within the regional territory.

**Table 3 - Overview of the fifteen Ecomusems officially recognised by Apulia Region**

Name	Geographical area	Managing body	Description
<i>Ecomuseo dei paesaggi culturali del Capo di Leuca "Massarone"</i>	Province: Lecce; Municipality: Alessano	<i>Liberazione</i> - Association for social promotion (APS)	The ecomuseum seeks to protect and enhance the landscape and natural heritage (cultural landscapes), primarily composed of the ancient farmhouse "Il Massarone" (16th century) and the historic villages in the reference area. As for the intangible heritage, the ecomuseum currently aims to promote the rural aspect connected to the territory and preserve the typical peasant identity of the region. Within the Massarone farmhouse, musical performances, wine and food tastings, workshops, guided tours are organized.
<i>Ecomuseo di Venere – Tricase Port Museum</i>	Province: Lecce; Municipality: Tricase	<i>Magna Grecia</i> - Cultural Association	Tested in the small coastal community of Tricase Porto, in the far south of the Apulia region in southern Italy, the project arises from the need to counteract the socio-economic and cultural desertification of small fishing communities, brought about by the persistent economic crisis in the sector, resulting in social emigration. The idea revolves around the construction of a development model capable of "preserving and enhancing the knowledge and flavors of the cultural heritage of the coasts and the sea." The Port Museum model is based on the rediscovery and enhancement of the cultural heritage of small fishing communities: ancient crafts and their equipment, traditional fishing techniques, types of boats and routes, methods of preserving, preparing, and consuming local fish, and many other excellences found in the ports and in the memory of fishers.
<i>Ecomuseo Urbano di Botrugno (EUB)</i>	Province: Lecce; Municipality: Botrugno	<i>Laboratorio Ecomuseale di Botrugno</i> – cultural association	During a town meeting, the municipality expressed the idea of creating, in collaboration with the University of Salento, an urban ecomuseum in the small town of Botrugno. Some citizens formed a working group that over time became the new ecomuseum workshop. The EUB ecomuseum aims to transfer and pass on the knowledge of ancient trades as urban heritage. This area is characterized by the art and tradition of "panari" (which would be wicker baskets), representing the intangible heritage that the ecomuseum promotes and preserves.
<i>Ecomuseo della pietra leccese e delle cave di Cursi</i>	Province: Lecce; Municipality: Cursi.	Cursi Municipal administration	Cursi is considered the most important extractive basin in the Salento peninsula. There are numerous active quarries within the municipal territory. Reflection on design, the strengthening of the marketing network, the organization of cultural events set within the quarries, the enhancement of the landscape through a Quarry Park, the establishment of the Ecomuseum of <i>Pietra Leccese</i> have represented, over the years of continued activity, a kind of reparation by the community to the land, the stone, and labor. A blend of art, craftsmanship, and the extractive industry that continues to this day.
<i>Ecomuseo del Paesaggio delle serre salentine</i>	Province: Lecce; Municipality: Neviano	<i>Ecomuseum</i> Association	The ecomuseum embraces and preserves the concept of rural identity (dry stone walls) with particular attention to the agricultural aspect and all related activities (pruning, grafting, and woodworking with olive wood). In an effort to rediscover the hidden signs that history, culture, land use, and all those collective actions have imprinted on the landscape, the Ecomuseum of Neviano organizes walks (on foot or by bicycle) to explore lesser-known places, collaborates with local schools on environmental education projects, supports small agricultural entrepreneurs, sets up thematic historical, artistic, and photographic exhibitions, promotes works by local authors, organizes theatrical events in the local dialect, and revives and reintroduces old traditions.
<i>Ecomuseo dei paesaggi di pietra di Acquarica di Lecce</i>	Province: Lecce; Municipality: Vernole	Vernole Pro-loco	The ecomuseum is structured around the archaeological area of Pozzo Seccato, where archaeological investigations have revealed the presence of a small, fortified centre built towards the end of the 4th century BC. Around the settlement, there are significant cultural heritage sites distributed throughout the countryside that surrounds the town of Acquarica, which is integrated into the characteristic landscape of Salento, dotted with rural architectures such as farms, <i>trulli</i> (traditional Apulian dry stone huts with conical roofs), haylofts, <i>specchie</i> (stone structures), dry stone walls, and <i>tratturi</i> (ancient pastoral paths). The uniqueness of this landscape lies in its vastness and the potential for development of various themes and places that

			span thousands of years in history.
<i>Ecomuseo di Cavallino</i>	Province: Lecce; Municipalities: Cavallino, Lizzanello	Cavallino municipal administration	An expansive metal frame structure, covered by a polycarbonate roof, serves as the entrance. Ascending to the top of this platform allows visitors to admire the entire site. The "widespread" museum preserves all distinctive aspects: not only the archaeological remains but also the rural buildings, dry stone walls, and native flora. The area is entirely served by a network of pedestrian and cycling paths, designed to connect the ancient settlement with the modern one. Visitors can choose among three different routes that lead them to discover the main points of archaeological, landscape, and environmental interest.
<i>Ecomuseo Terra d'Arneo</i>	Province: Lecce; Municipalities: Leverano (lead municipality), Copertino, Guagnano, Nardò, Porto Cesareo, Salice Salentino, Veglie, San Donaci, San Pancrazio	Leverano municipal administration	The ecomuseum is totally in line with the area defined as <i>Terra d'Arneo</i> by PPTR ( <i>Piano Paesaggistico Territoriale Regionale</i> ) between Lecce and Brindisi. The ecomuseum is represented by an image that refers to the landscape structure of the <i>Terra d'Arneo</i> , characterized by the presence, on a vast territory surrounded by urban centers, of coastal towers, fortified farms, and rural villages often isolated in the agricultural and natural landscape.
<i>Ecomuseo bonifiche di Frigole</i>	Province: Lecce; Municipality: Frigole (Lecce Municipality hamlet)	Ecomuseum of Frigole Foundation	Within the activities of the ecomuseum, the community of Frigole and the entire territory that was involved in the reclamation works will identify true "instructions for use" for enjoying the landscape related to their own territory. Between 1870 and 1890, the first reclamation efforts were initiated by Federico. The reclamation area constitutes the landscape heritage that the ecomuseum seeks to preserve. All related activities (reclamation artifacts), on the other hand, represent the artistic, cultural, and intangible heritage of the ecomuseum. The area is also characterized by a rich Mediterranean scrubland (along the coast).
<i>Ecomuseo del Limes Bizantino</i>	Province: Brindisi; Municipality: San Donaci	<i>Fonte rivalis</i> – cultural association	The ecomuseum's strategy promotes the resources and endogenous potential of the Salento hinterland. The territory is characterized by a marshy environment with various canal systems for the countryside. The architectural heritage includes a house museum representing a typical dwelling from the 1940s, set up with objects and furnishings donated or loaned for free use by the population of San Donaci. The ecomuseum aims to recover the hiking heritage and, at the same time, the historical memory of communication routes that crossed the Salento territories.
<i>Ecomuseo Castello d'Alceste</i>	Province: Brindisi; Municipality: San Vito dei Normanni	San Vito dei Normanni Municipal administration	The Castle of Alceste is the site of a very important archaeological area because it is one of the few settlements where the earliest phases of Messapian civilization are documented. It was indeed inhabited between the 8 <sup>th</sup> and early 5 <sup>th</sup> centuries B.C. In the Castle area, archaeological remains are 'scattered' in the rural landscape, of which they are an integral part: for example, the ancient walls (6 <sup>th</sup> century B.C.) run beneath the dry-stone walls of land demarcation, allowing the reconstruction of the layout of the Messapian fortification.
<i>Ecomuseo Palude la Vela e Mar Piccolo (Taranto)</i>	Province: Taranto; Municipality: Taranto	Association for social promotion (APS)	L'Eco.Pa.Mar. is working for the protection, enhancement, and enjoyment of the Regional Oriented Nature Reserve (RONR) "Palude La Vela." It responds to environmental, natural, and anthropic emergencies, also organizing numerous events related to material and immaterial culture to contribute to the value chain for the enhancement of the entire <i>Mar Piccolo</i> and the monitoring of bird and plant species inhabiting the area during different times of the year.
<i>Ecomuseo Valle d'Itria</i>	Province: Bari; Municipalities: Locorotondo (lead municipality), Martina Franca, Cisternino, Fasano, Monopoli, Alberobello	<i>Valle d'Itria Ecomuseum</i> association - Association for social promotion (APS)	The main characteristic of the valley is the <i>trulli</i> (this area is also referred to as the Valley of <i>Trulli</i> ), typical and exclusive stone cone-shaped dwellings, as well as the farms and the rural landscape in general, characterized by the extensive use of local stone for building dry stone walls and the vibrant red soil typical of southern Apulia. The ecomuseum is aimed at enhancing and promoting the ethical memory, life, figures and events, material and immaterial culture, relationships between the natural environment and the anthropic environment, traditions, activities, ways of life and work, and local typical products, as well as how traditional settlements have shaped the formation and evolution of the landscape and geographical territory of <i>Valle d'Itria</i> and other affiliated municipalities.
<i>Ecomuseo del poggio - Antiche Ville</i>	Province: Bari; Municipality: Mola di Bari	<i>Antiche ville</i> – cultural association	The <i>Antiche ville</i> Ecomuseum refers to the territorial area composed of the two rural districts called "BRENCA" and "SAN MATERNO," located mostly in the territory of Mola di Bari, as well as in portions of the district "POZZOVIVO" and smaller adjacent areas. From a landscape perspective, the ecomuseum is primarily composed of over twenty-five ancient villas, various farmhouses, and old houses surrounded by dry stone walls. These are the components of an exceptionally valuable heritage in terms of architecture, culture, and demography, serving as a pivot around which a targeted policy for protection, enhancement, and development can be promoted for the benefit of urban centers.
<i>Ecomuseo -Valle del Carapelle</i>	Province: Foggia; Municipalities: Ortona, Stornara, Sornarella, Ascoli Satriano	Ortona municipal administration	The ecomuseum project of the Carapelle Valley is the result of an ongoing journey that has seen the University of Foggia, local administrations, and citizens engaged in a series of activities aimed at understanding the cultural heritage. Great attention is given to places and structures related to traditional trades and activities (such as farms, farmhouse dwellings, oil mills, transhumance paths, and structures linked to transhumance activities) and to the ancient history (archaeological sites).

**Source:** Author's elaboration

**Figure 1** – Geographical overview of the 15 ecomuseums officially recognised by Apulia

### Regional Government

Source: Author's elaboration

## LITERATURE REVIEW

Numerous scholars have assessed the value generated by an ecomuseum in relation to the three pillars of sustainability, which is a highly challenging task requiring a thorough analysis. In this direction, ecomuseums can be seen as a sustainable product and can accelerate regional development (Para & Negacz, 2014). In the case of the Subcarpathian province, Negacz et al proposed an analysis, partially reflected in this paper, based on certain indicators identified within three "sustainable" areas. The MACDAB method (Borrelli & Corsane 2008) involves a thirty-question self-assessment questionnaire, allowing an ecomuseum to evaluate its performance in three different strategic sectors: (i) involvement of the local community and participation, (ii) governance and decision-making processes, and (iii) management of local heritage. Maggi (Maggi, 2002) referred to the ecomuseum as a pact by which the community takes care of its own territory. This pact is more likely to be fulfilled if the community develops the so-called horizontal networks: formal relationships, norms, and trust among actors operating at the same level of society. A socially "cohesive" community will be facilitated in building awareness and understanding of the value of cultural heritage (Galeotti, 2016), to preserve and promote it. The change generated by an ecomuseum may help build a local community that is so involved as to lead ecomuseal processes, fostering social relationships and involving a wide network of stakeholders to create local networks (Galeotti, 2016). Success, as Galeotti also explains, lies in being able to involve different levels or layers of society to create vertical networks as well, i.e., relationships through macro-structures, at the macro-level of societal institutions. This process can facilitate more effective governance for the ecomuseum that defines actions for self-sustainability and encourages positive relationships between heritage and tourism (Corsane, Davis, Elliott, Maggi, Martas & Rogers, 2007).

Existing literature suggests that "vertical" dialogue among various actors, such as tourism stakeholders, local and regional governments, and residents can foster a multidisciplinary approach that is crucial for creating efficient sustainable tourism practices to safeguard cultural heritage (Morales-Fernández & Lanquar, 2014; Mendes & Vareiro 2015). In general, relational patterns within a community can illuminate participatory management in local tourism, considering the complexity characterizing social relations and the tourism



system (Burgos & Mertens, 2016). On one hand, horizontal networks can help create a critical mass that cares for and safeguards its heritage. On the other hand, vertical cooperation can ensure the improvement of tourism product quality, better quality of services, a more efficient production process, growing sustainability of the tourist destination, and a more competitive tourist destination (Costa & Lima 2018). Enhancing tourist flow, seen as a cultural exchange, is a lever for local development, which can promote the mobilisation of resources in territorial management and generate new economies with a strong cultural component, including the ecomuseum, which has great innovative potential (Riva, 2012). In this perspective, the true challenge of an ecomuseum is to facilitate participatory processes through a multidisciplinary approach, involving all local actors to create mutual benefits between the ecomuseum project and tourist flow, and positively impacting the socioeconomic development of the local community in that specific area.

## MATERIALS AND METHODS

The objective of this article is to analyse the activities performed by the ecomuseums to evaluate the influence of these activities in relation to the economic, environmental, and social aspect. The assessment process has involved the following steps: identification of the most relevant areas that characterize sustainability performances of ecomuseums, choice of the appropriate indicators, assignment of their range scores, data collection, calculation of the score for each ecomuseum and their visualization by graphic representation. To conduct this type of analysis, the most common impact assessment methods used by private companies or businesses are not applicable to ecomuseums since they are not organized on a business model and do not aim to generate direct profit. The first step in conducting this analysis is to perceive ecomuseum as a local development project with the objective of fostering the sustainable development of the territory through the enhancement and promotion of the cultural and natural heritage of the territory. In this perspective, the "ecomuseum project" has been redesigned through an impact framework (a measurement tool used in project design also following a theory of change approach), which establishes a temporal connection between the long-term project objective, intermediate outcomes, and related activities. Thanks to this approach, it was easier to identify the areas of intervention and to select the most relevant indicators tasked with "measuring" the activities and quantifying the achievement of intermediate outcomes.

Three macro-areas of performance were identified for the "ecomuseum project," corresponding to the three pillars of sustainable development: social, economic, and environmental. For each of these reference areas, the outcomes (the changes that the ecomuseum aims to pursue to generate value) have been mapped. After mapping the outcomes and defining the activities within each pillar/macro-area, indicators were identified to measure and quantify the actions taken to achieve the mapped outcomes. The collection of the indicators has been carried out through a survey directly addressed to the managing bodies of the ecomuseums. The first part of the questionnaire aimed to gather information useful for the profiling of the ecomuseum: reference territory, promoting entities, a brief description of the tangible and intangible heritage that the ecomuseum protects and safeguards. The central part of the questionnaire was divided into three sections, each related to the three identified macro-areas: economic development, environmental conservation and protection, and social inclusion. For each of these, 8 questions were asked. As a final step, a scoring system has been developed, assigning a score to each indicator based on the information collected: for most of them a numerical scale has been adopted, while for others a descriptive scale (poor, good, excellent) has been used. Table 4, here below, summarizes the macroareas, the outcomes identified for each of them, the related selected indicators, and the assigned scores.

**Table 4 - Ecomuseums' outcomes and indicators identified**

Macroarea	Outcome	Indicators	scores
Economic aspect -	Increasing employment	N. of people already involved	None - 0 From 1 to 10 - 0.5 More than 10 - 1
	Creation of new job opportunities	N. of people to employ in the next 12 months	None - 0 From 1 to 10 - 0.5 More than 10 - 1
	Improvement of human capital (Skill development)	"ToT" (Training of Trainers) courses	No - 0 Yes - 1
	Developing and enhancing sustainable tourism	N. of tourists/visitors per year	500 < - 0 From 500 to 1000 - 0.5 >1000 - 1
	Improving infrastructure	Services and infrastructures improved	No - 0 Yes - 1
	Supporting and enhancing local entrepreneurship	New business/commercial activities	No - 0 Yes - 1
		Existing businesses that have developed/enlarged	No - 0 Yes - 1

		Increase in sales of local products	No – 0 Yes - 1
Environmental aspect	Preserving and protecting biodiversity	N. of protected areas within the ecomuseum	None - 0 One – 0.5 More - 1
		N. of protected species within the ecomuseum	None - 0 One – 0.5 More - 1
	Resources management	N. of activities to reduce water and energy consumption	None - 0 One – 0.5 More - 1
	Reducing CO <sub>2</sub> emissions	Photovoltaic solar panels	No – 0 Yes - 1
		Strategy for tourist traffic management	No – 0 Yes - 1
	Environmental research and education	N. of activities dealing with slow mobility	None - 0 From 1 to 10 – 0.5 More than 10 - 1
		N. of awareness activities on environmental sustainability	None - 0 From 1 to 10 – 0.5 More than 10 - 1
		N. of projects dealing with sustainable development	None - 0 One – 0.5 More - 1
Social aspect	Involving local community	Degree of involvement	Poor – 0 Good – 0.5 Excellent - 1
		Influence of social community towards the strategy and decisions of the ecomuseum	No – 0 Yes - 1
	Creating local network	N. of events organized in collaboration with local associations	None - 0 From 1 to 10 – 0.5 More than 10 - 1
		Number of projects/ proposals developed with local associations	None - 0 One – 0.5 More - 1
	Improving human capital	Training for visitors	No – 0 Yes - 1
	Inclusion of socially disadvantaged categories	N. of activities organized for socially disadvantaged categories	None - 0 From 1 to 10 – 0.5 More than 10 - 1
	Raising awareness on social issues	Level of spreading and dissemination	Poor – 0 Good – 0.5 Excellent - 1
	Communication, information, and dissemination	Level of spreading and dissemination	Poor – 0 Good – 0.5 Excellent - 1

Source: Author's elaboration

## RESULTS

The scores for each ecomuseum have been summed up, and the final scores have been normalized (in %) to create a comparable scale. Table 5 includes the scores of each ecomuseum grouped separately for the three aspects, as well as the total score. Ecomuseum "Palude La Vela e Mar Piccolo Taranto" and "Castello d'Alceste" did not respond to the questionnaire.

**Table 5 - Ecomuseums' score**

Ecomuseum	Economic aspect	Environmental aspect	Social aspect	Total
Ecomuseo della pietra Leccese e delle cave di Cursi	3.5 - 43.75%	3 - 37.5 %	6.5 - 81.25%	13 - 54.16%
Ecomuseo del Libes Bizantino	1.5 - 18.75%	4.5 - 56.25%	5.5 - 68.75%	11.5 - 47.9%
Ecomuseo del Paesaggio delle Serre Salentine di Neviano	3.5 - 43.75%	3.5 - 43.75%	4.5 - 56.25%	11.5 - 47.9%
Ecomuseo - Porto Museo di Tricase	6.5 - 81.25%	5 - 62.5%	7.5 - 93.75%	19 - 79.16%
Ecomuseo Bonifiche di Frigole	4.5 - 56.25%	3.5 - 43.75%	5 - 62.5%	13 - 54.16%
Ecomuseo del Poggio di Mola di	4.5 - 56.25%	2.5 - 31.25%	4 - 50%	11 - 45.83%

Bari				
EUB - Ecomuseo Urbano Botrugno	3.5 – 43.75%	2 – 25%	3.5 – 43.75%	9 – 37.5%
Ecomuseo dei Paesaggi Culturali del Capo di Leuca - Massarone	4.5 – 56.25%	2.5 – 31.25%	6.5 – 81.25%	13.5 – 54.16%
Ecomuseo Valle del Carapelle	4 – 50%	3 – 37.5%	0.5 – 6.25%	7.5 – 31.25%
Ecomuseo della Valle d'Itria	7 – 87.5 %	4 – 50%	6.5 – 81.25%	17.5 – 72.91%
Ecomuseo dei paesaggi di pietra di Acquarica di Lecce	5 – 62.5 %	3 – 37.5%	5 – 62.5%	13 – 54.16%
Ecomuseo diffuso di Cavallino	4 – 50%	2 – 25%	4 – 50%	10 – 41.6%
Ecomuseo Terra d'Arneo	3 – 37.5 %	4 – 50%	4.5 – 56.25%	11.5 – 47.91%
Ecomuseo Palude La Vela e Mar Piccolo Taranto	N.A.	N.A.	N.A.	
Ecomuseo Castello d'Alceste	N.A.	N.A.	N.A.	

Source: Author's elaboration

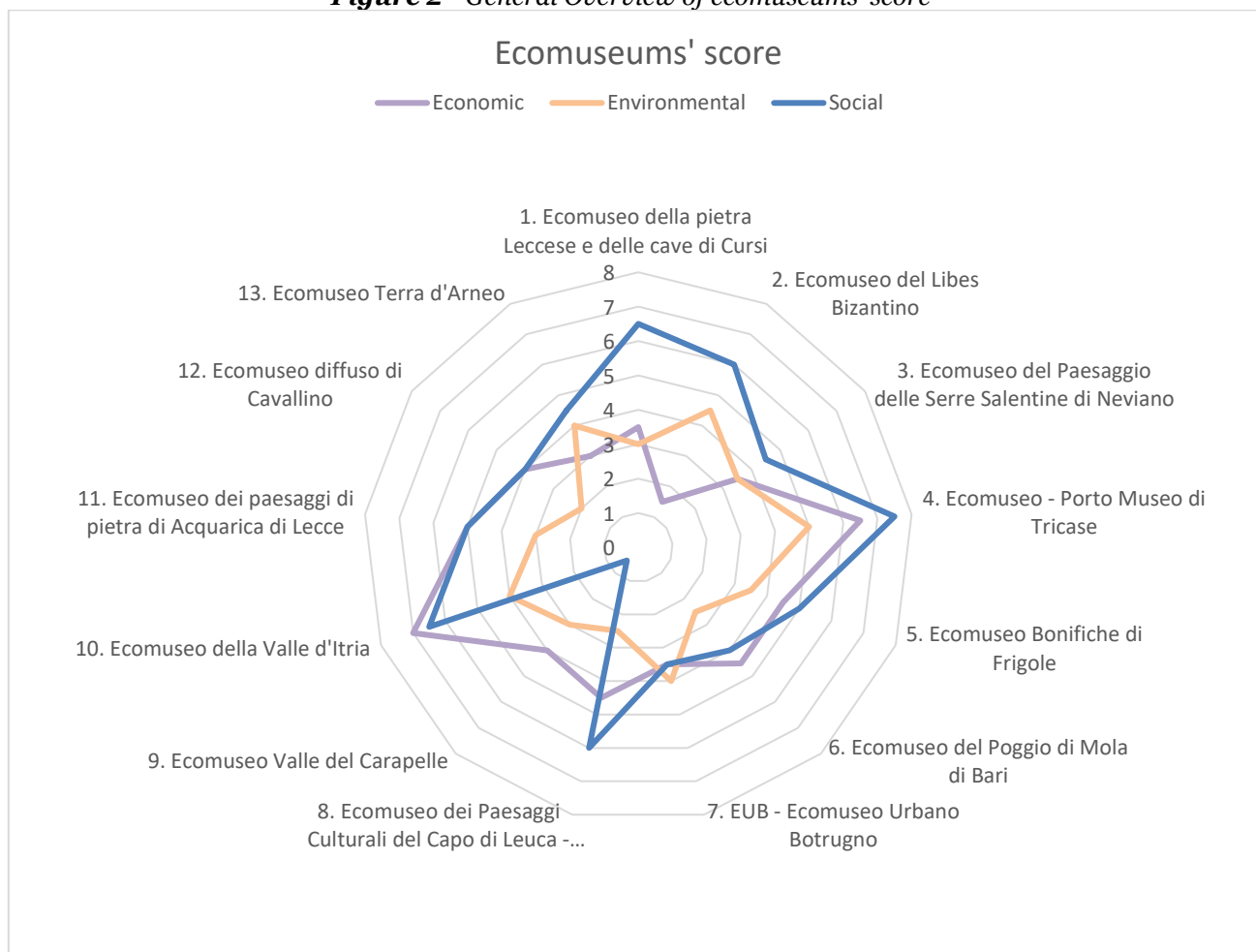
The macro-area in which ecomuseums appear to be most active is the social one. The first outcome for the social aspect was the involvement of the entire local community in defining the strategies of the ecomuseum while simultaneously pursuing its objectives. Twelve out of a total of 13 interviewed ecomuseums stated that the choices and strategies of the ecomuseum were influenced by the local community. This means that the local community is actively involved in the 'pact' mentioned by Maggi (see § 2, literature review), through which the local community takes care of its own territory. Twelve ecomuseums declare that they collaborate with local associations (mostly in sports, culture, and art) for the organization of events, but there are still few ecomuseums (5, precisely) that facilitate the exchange of best practices to the extent of implementing local development projects. The last 'social' outcome mapped is related to the visual identity and the dissemination and communication channels used by ecomuseum managers. It came out that interviewed ecomuseums need to enhance their visibility and to better promote their activities through digital channels in general (4 ecomuseums do not have their own website). These can be strategically used to create a positive social impact, influencing attitudes, community engagement, and promoting important social values.

As for the economic sphere, the first outcomes concern the increase in employment and the creation of new job opportunities. Twelve out of thirteen ecomuseums interviewed declared that they involve only volunteer workers who, in some cases (where the managing entity is the municipal administration), have been remunerated through civilian service. The ecomuseum association of *Valle d'Itria*, which manages the corresponding ecomuseum, stated that it has entered a collaboration contract with five people currently involved in activities. The same ecomuseum stated that it received direct contributions (in 2017) from public administrations responsible in the same area. Financial aspect is crucial for the long-term sustainability of ecomuseums, and it is important to note that ecomuseums do not have direct revenues (e.g., ticket costs). To address the needs related to this aspect, four ecomuseums have set a membership fee for associates, while two ecomuseums stated that they have collected contributions (although minimal) from private individuals. Regarding external visitors, two ecomuseums stand out from the others: Tricase Port Museum and the Ecomuseum of *Valle d'Itria*. Both can benefit from a significant tourist flow (see Table 1) in the same area. Ten ecomuseums stated that new businesses or commercial activities have been initiated since the ecomuseum became active, but very few of these (and those already existing) work

closely with the ecomuseum. Naturally, the ecomuseum's support for local activities, especially those with strong cultural relevance, represents one of the objectives of the 'pact,' but from this perspective, there is still room to improve synergies.

The environmental aspect is where ecomuseums have collected lower scores compared to the first two. Eight ecomuseums host at least one recognized protected area in their territory (nature reserves, Sites of Community Interest, Special Protection Areas), while seven have declared the presence of protected species (both animals and plants) recognized by relevant regulations. Protected species include monumental olive trees that the Apulia Region government, with the Regional Law 14/2007, wanted to protect and enhance due to their productive function, ecological and hydrogeological defence, as well as peculiar and defining elements of the history, culture, and regional landscape. So far, management practices for sustainable tourism in ecomuseums are limited to promoting some forms of slow and respectful use of the territory and community heritage assets, monitoring their state of conservation, and reporting any issues related to them, including those caused by overtourism, to the competent local municipalities. Regarding the theme of "environmental protection" and broader sustainability, twelve out of thirteen ecomuseums have declared that they have carried out activities and events aimed at increasing awareness on these issues, but only the Port Museum of Tricase has participated in various EU projects (mostly funded by Interreg programs) mainly related to Blue Economy, marine litter, aquaculture, and fisheries through the transfer of best practices for better management of marine resources. Figure 2 below summarizes the final score of the ecomuseums.



**Figure 2 - General Overview of ecomuseums' score**

Source: Author's elaboration

Based on the above, the Port Museum of Tricase collected the highest scores in this analysis. The following section briefly reports some strengths highlighted by the interviewed manager of the Port Museum of Tricase.

#### 4.1. Tricase Port Museum – A successful Model

Thanks to the collaboration between the local community, the cultural association Magna Grecia Mare, the Municipality of Tricase and an international partner such as CIHEAM Bari (the Italian headquarters of the International Centre for Advanced Mediterranean Agronomic Studies), the process of awareness and recognition of the value of the tangible and intangible heritage of the community was initiated. The synergies between these entities enabled a quality governance of the enhancement and revitalization process of Tricase's coastal area and its maritime material and immaterial heritage. This collaboration represents a successful case of relational

synergy among entities that could be termed as meta-organizers, taking on the pivotal task of directing territorial management towards consistent and effective strategic paths. Meta-management plays a crucial role in facilitating the initiation of shared decision-making processes, structures, and resources among stakeholders, leading to the proposal of an integrated tourism offer within the local tourism system. The effectiveness of meta-management depends on its ability to shape and disseminate an identity culture of the destination, based on key guiding principles: continuous collaboration among parties, long-term relationships, constant improvement in quality, professional growth of operators, safeguard of environmental resources, and enhancement of local culture and traditions.

One of the challenges faced by the promoter of the Port Museum of Tricase was to establish a platform for local community involvement in the thematic growth of the territory based on the enhancement of maritime and coastal heritage. The Tricase Port Museum model operates with a typically bottom-up approach, dynamically supported and promoted by its community. The entire project path of the Port Museum is thus structured as a participatory process of recognition, care, and management of the local, maritime, and coastal cultural heritage, capable of promoting sustainable social, environmental, and economic growth. Therefore, the Port Museum operates as a cultural institution, articulated by locations, itineraries, and systems, ensuring, on the coastal territory and with the participation of the local community, the functions of

research, conservation, and enhancement of environmental, historical, and cultural assets representative of the environment.

Regarding the sustainable development of coastal and maritime areas, in the framework of the Interreg Greece-Italy *MUSE* project, the Tricase Port Museum promoted and shared with the local community the "Charter of Principles of Tricase Port Museum", a document that can be considered a kind of "territorial agreement." The process of elaborating the "Charter" was characterized by the constant sharing of the document with local stakeholders. In public meetings facilitated by experts, the principles were presented, discussed, amended, modified, and finally validated by local stakeholders who contributed to defining the document. Overall, the Charter was designed to be an ethical and directional reference (a pact-contract) for all institutional, economic, and social actors operating in the territory of the ecomuseum, and thus, in the Port, the fishing village, and the entire coastal area of Tricase. Furthermore, considering the historical relationships and functional synergies established between the inland and coastal areas, it was deemed appropriate to propose the subscription of the document to all entities operating in the administrative territory of the Municipality of Tricase, i.e. those recognizing the value of the Tricase Port Museum and expressing the will to adhere to the guiding principles underlying the Charter, effectively strengthening the role and participation of the local community in the development of the territorial project.

## DISCUSSION

The findings of this analysis clearly indicate that Apulian ecomuseums are more active in the social context where they received higher scores compared to the environmental and economic aspect and, the ecomuseum "Porto Museo di Tricase" could be defined as successful model to follow. Anyway, there is still room to improve the performance of ecomuseums, which appear to have untapped potential in the three contexts analysed, particularly for the environment and economic aspect. Some weaknesses have emerged from the data collected through the questionnaire, and based on those, recommendations have been developed addressing ecomuseum managers, the local communities, local administrations, and all stakeholders involved in the tourism sector with the aim of further strengthening the development process initiated through the activities of the ecomuseum:

- The development of a digital strategy for the ecomuseums, mainly involving their digital channels (website as well as social media accounts)  
Four ecomuseums still do not have their own website, and this can distance the community and all visitors from the ecomuseum's objectives. Continuous updating of digital channels can serve as a launching pad to promote their activities fostering the interaction between different local actors (inside and outside the ecomuseum).
- Development of a strategic governance built on sustainable relations with local authorities;  
The reference context still requires a comprehensive plan of cultural interventions capable of strengthening identity and developing services for the community and tourism, which is still limited compared to the main regional attractions and too focused on leisure and beach segments. Therefore, the development plan of the ecomuseum aims to be a governance model for the territory's resources and landscape, not only to compete on local, national, and international tourism stages but also to generate social, cultural, and economic impacts internally (youth employment, high professionalism, skills, and relationships) to address the challenges of environmental and cultural enhancement from a sustainable and qualitative perspective. This project's orientation aligns with regional guidelines proposing the systematization of environmental and cultural resources for efficient management and organized and sustainable use of the territorial heritage through the promotion of high social and economic return enhancement projects.
- Strengthening of the local network

Literature has revealed that the preservation and promotion of cultural heritage, especially when driven by active citizen participation, plays a crucial role in safeguarding assets and fostering community inclusion, fairness, and affiliation. The findings of this study confirm that by building both horizontal and vertical networks, communities can leverage diverse perspectives, resources, and opportunities to address complex challenges, capitalize on local assets, and drive sustainable development. In the case of the Port Museum of Tricase, this approach has led to promote and facilitate joint initiatives which also provided possibilities to improve the financial sustainability of the ecomuseum which represents a critical aspect, as emphasized by the various ecomuseums interviewed.

## CONCLUSION

The objective of this study was to analyse the activities of the Apulian ecomuseums, to assess their performance within a framework of sustainability. Outcomes related to the purposes of the ecomuseums were considered and measured through indicators collected in the social, economic, and environmental domains. The results of this study indicate that in the social sphere, ecomuseums in Apulia are particularly active. However, there are interesting opportunities to improve performance even considering the lower score obtained in the economic

and environmental context. The literature in this field suggests that an ecomuseum could be seen as a tool (an "incubator") for local socioeconomic development if the local community, local administrations, and stakeholders involved in the tourism sector share a common vision. Understanding the potential and possibilities that an ecomuseum can generate in the area plays an important role in building a network in which all local actors must feel involved. This study seems to confirm this theory, as the success of the ecomuseum project and local socioeconomic development go hand in hand: when the ecomuseum is particularly active, the local community can benefit directly from this process. The successful model of the Tricase Port Museum highlighted some implications arising from the results collected: the meta-governance and the bottom-up approach is essential to create a virtuous model of local collaboration. The added value is provided by the synergic collaborations between local actors which have been fundamental in developing strategic initiatives for the "life" of the ecomuseum. Indeed, the local network(s) can be the entry point to apply for grants and programs organised by regional, national, and international institutions. The involvement of local universities (or research centre, as the case of Tricase) can be strategic to increase knowledge in the research field and, at the same time, they may offer graduate students in tourism. Also, the creation of a regional network of Apulian ecomuseums can foster the dialogue and the exchange of best practices among them. The Apulian regional government is trying to create a regional network of ecomuseums, convening periodic consultations where new possibilities that ecomuseums can pursue to revitalize local development are discussed. This study has contributed, to some extent, to expanding the existing literature in the field of impacts generated by ecomuseums. However, the fact that this study focused on qualitative data may limit the generalizability of its findings. For this reason, future research could consider the possibility of conducting the same assessment proposed in this paper by exploring any quantitative econometrics methods. For example, Social Return on Investment (SROI) is a methodology used to quantify the impact generated by a treatment (investment) in the social, economic, and environmental domains. It still remains to be clarified how effective the application of this methodology could be in a case study such as that of ecomuseums, which is not an external investment but rather a project born from the heritage existing in the territory. Additionally, future studies can be conducted by adapting the approach proposed in this paper to another region of Italy as well as to other regions in the world to understand how reliable this analysis can be in other contexts.

#### Credit Author Statement:

Conceptualization, C.S.; methodology, C.S., M.F.; validation C.S., M.F., V.F., G.C.; formal analysis, C.S.; investigation, C.S.; data curation, C.S.; writing—original draft preparation, C.S.; writing—review and editing, C.S. and M.F.; visualization, C.S. and M.F.; supervision, V.F., F.B., A.P.; project administration, G.C. All authors have read and agreed to the published version of the manuscript.

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